Changes for the Better

MITSUBISHI ELECTRIC

SPLIT-TYPE, HEAT PUMP AIR CONDITIONERS

February 2006

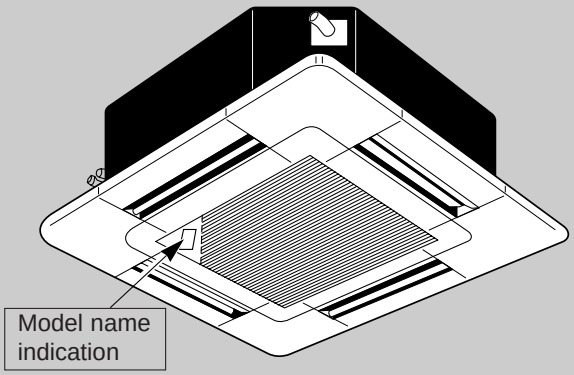
No. OC360

TECHNICAL & SERVICE MANUAL

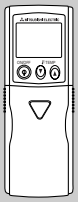
Series PLH Ceiling Cassettes R22

Indoor unit [Model names]	[Service Ref.]
PLH-3AAK	PLH-3AAK
PLH-4AAK	PLH-4AAK
PLH-5AAK	PLH-5AAK
PLH-6AAK	PLH-6AAK
PLH-3AAKH	PLH-3AAKH
PLH-4AAKH	PLH-4AAKH
PLH-5AAKH	PLH-5AAKH
PLH-6AAKH	PLH-6AAKH

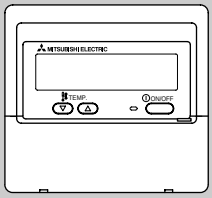
NOTE:
- This manual does not cover outdoor units. When servicing outdoor units, please refer to the outdoor unit`s service manual together with this manual.



INDOOR UNIT



WIRELESS REMOTE CONTROLLER



WIRED REMOTE CONTROLLER

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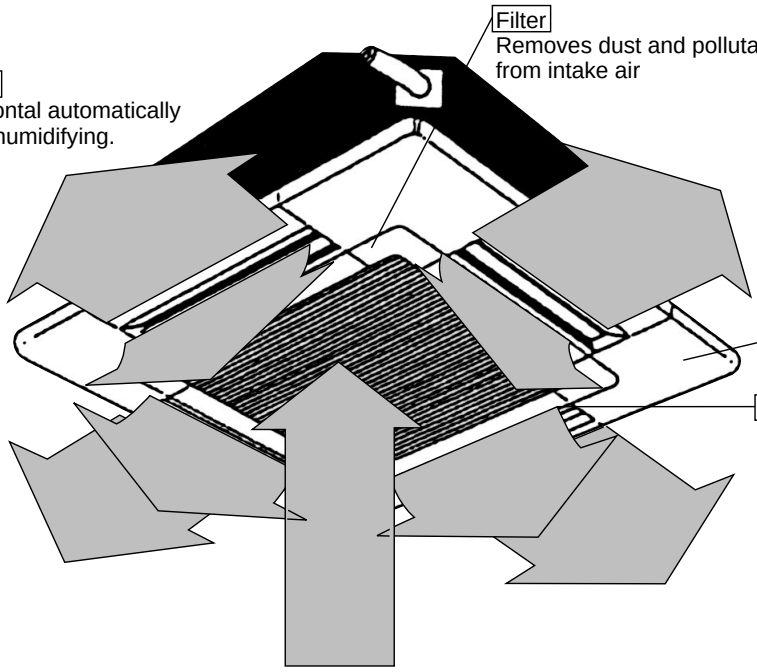
1 REFERENCE MANUAL

1-1. OUTDOOR UNIT'S SERVICE MANUAL

Service Ref.	Service Manual No.
PUH-3VKA$_2$.TH-A PUH-3YKA$_1$.TH-A PUH-4YKSA$_1$.TH-A PUH-5/6YKSA$_3$.TH-A	OC156
PUH-3VKA.TH PUH-3YKA.TH PUH-4/5/6YKSA.TH	OC325
PUH-3NKA.TH PUH-4/5/6TKSA.TH	OC354

2 PART NAMES AND FUNCTIONS

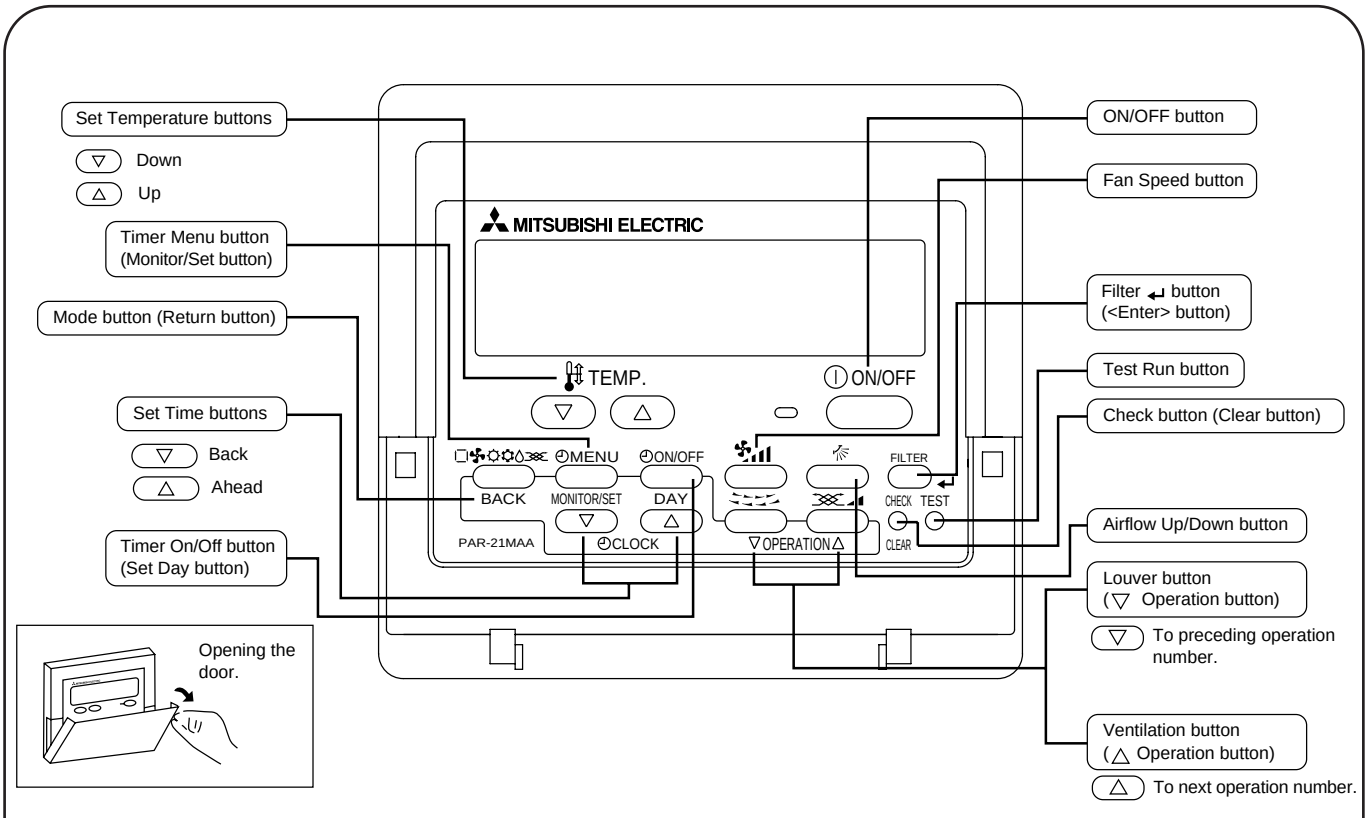
● Indoor Unit


Filter
Removes dust and pollutants from intake air
Horizontal Air Outlet
Sets airflow of horizontal automatically during cooling or dehumidifying.
Grille
Auto Air Swing Vane
Disperses airflow up and down and adjusts the angle of airflow direction.
Air Intake
Intakes air from room.

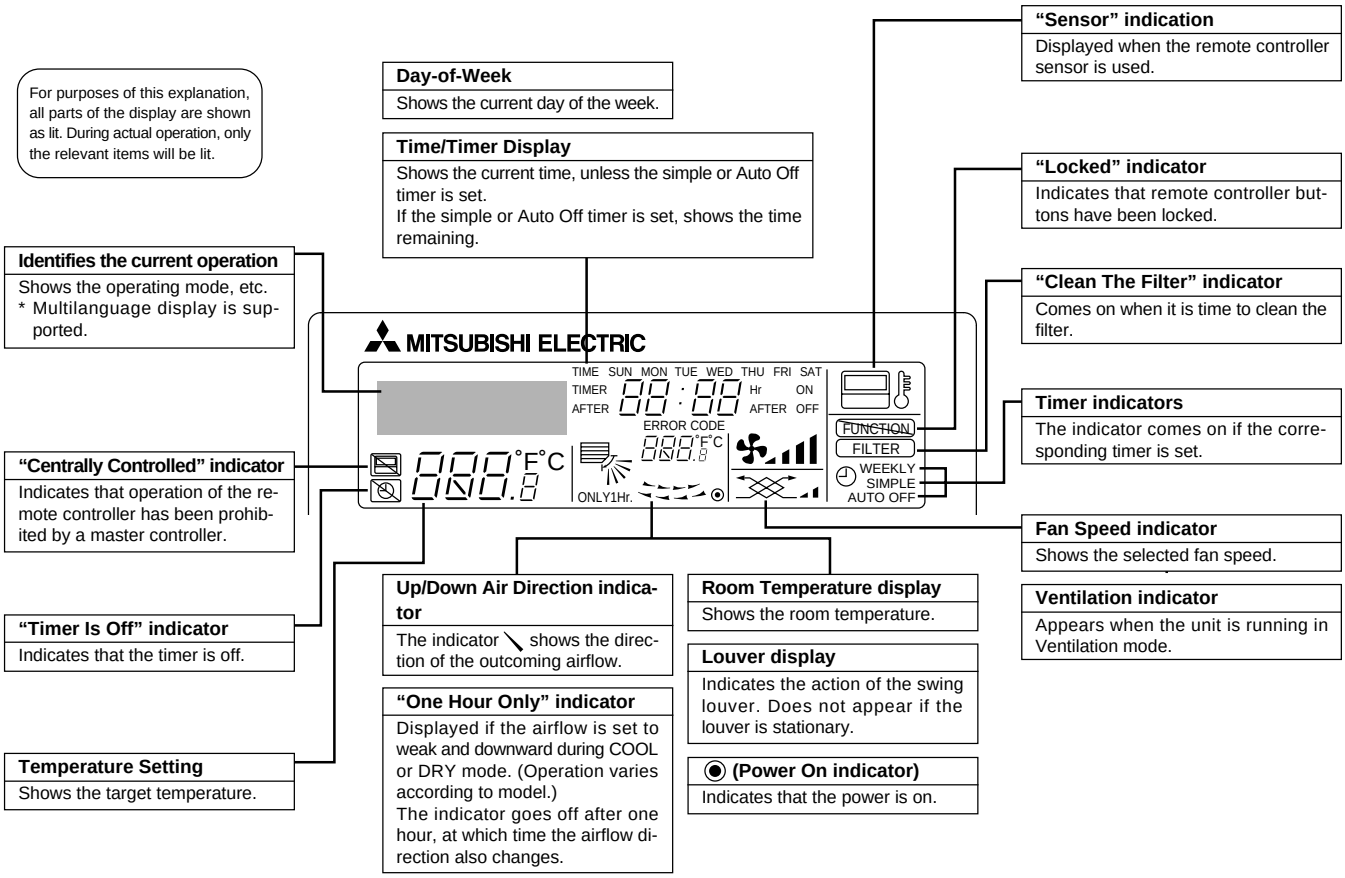
● Wired remote controller

On the controls are set, the same operation mode can be repeated by simply pressing the ON/OFF button.

● Operation buttons



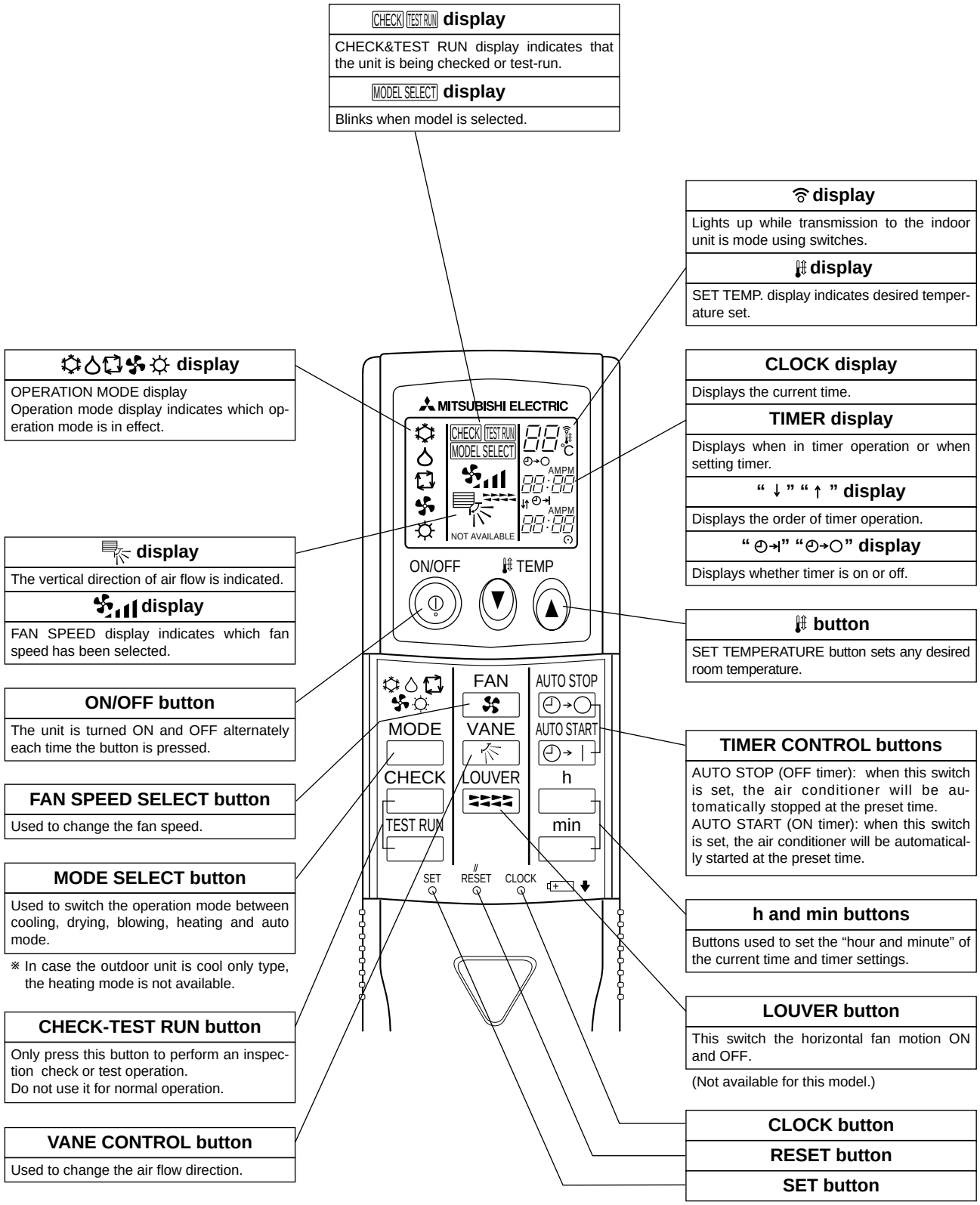
● Display


For purposes of this explanation, all parts of the display are shown as lit. During actual operation, only the relevant items will be lit.
Day-of-Week
Shows the current day of the week.
Time/Timer Display
Shows the current time, unless the simple or Auto Off timer is set.
If the simple or Auto Off timer is set, shows the time remaining.
"Sensor" indication
Displayed when the remote controller sensor is used.
"Locked" indicator
Indicates that remote controller buttons have been locked.
"Clean The Filter" indicator
Comes on when it is time to clean the filter.
Timer indicators
The indicator comes on if the corresponding timer is set.
Identifies the current operation
Shows the operating mode, etc.
* Multilanguage display is supported.
"Centrally Controlled" indicator
Indicates that operation of the remote controller has been prohibited by a master controller.
"Timer Is Off" indicator
Indicates that the timer is off.
Temperature Setting
Shows the target temperature.
Up/Down Air Direction indicator
The indicator shows the direction of the outcoming airflow.
"One Hour Only" indicator
Displayed if the airflow is set to weak and downward during COOL or DRY mode. (Operation varies according to model.)
The indicator goes off after one hour, at which time the airflow direction also changes.
Room Temperature display
Shows the room temperature.
Louver display
Indicates the action of the swing louver. Does not appear if the louver is stationary.
(Power On indicator)
Indicates that the power is on.
Fan Speed indicator
Shows the selected fan speed.
Ventilation indicator
Appears when the unit is running in Ventilation mode.
MITSUBISHI ELECTRIC
TIME SUN MON TUE WED THU FRI SAT
TIMER
AFTER
Hr
ON
AFTER
OFF
ERROR CODE
FUNCTION
FILTER
WEEKLY
SIMPLE
AUTO OFF
ONLY1Hr.

Caution

- Only the Power on indicator lights when the unit is stopped and power supplied to the unit.
- If you press a button for a feature that is not installed at the indoor unit, the remote controller will display the "Not Available" message.
  If you are using the remote controller to drive multiple indoor units, this message will appear only if he feature is not present at the parent unit.
- When power is turned ON for the first time, it is normal that "PLEASE WAIT" is displayed on the room temperature indication (For max. 2minutes). Please wait until this "PLEASE WAIT" indication disappear then start the operation.

● Wireless remote controller


CHECK TEST RUN display
CHECK&TEST RUN display indicates that the unit is being checked or test-run.
MODEL SELECT display
Blinks when model is selected.
display
Lights up while transmission to the indoor unit is mode using switches.
display
SET TEMP. display indicates desired temperature set.
display
OPERATION MODE display
Operation mode display indicates which operation mode is in effect.
CLOCK display
Displays the current time.
TIMER display
Displays when in timer operation or when setting timer.
" ↓ " " ↑ " display
Displays the order of timer operation.
" " " " display
Displays whether timer is on or off.
display
The vertical direction of air flow is indicated.
display
FAN SPEED display indicates which fan speed has been selected.
button
SET TEMPERATURE button sets any desired room temperature.
ON/OFF button
The unit is turned ON and OFF alternately each time the button is pressed.
TIMER CONTROL buttons
AUTO STOP (OFF timer): when this switch is set, the air conditioner will be automatically stopped at the preset time.
AUTO START (ON timer): when this switch is set, the air conditioner will be automatically started at the preset time.
FAN SPEED SELECT button
Used to change the fan speed.
h and min buttons
Buttons used to set the "hour and minute" of the current time and timer settings.
MODE SELECT button
Used to switch the operation mode between cooling, drying, blowing, heating and auto mode.
※ In case the outdoor unit is cool only type, the heating mode is not available.
LOUVER button
This switch the horizontal fan motion ON and OFF.
(Not available for this model.)
CHECK-TEST RUN button
Only press this button to perform an inspection check or test operation.
Do not use it for normal operation.
CLOCK button
RESET button
SET button
VANE CONTROL button
Used to change the air flow direction.
MITSUBISHI ELECTRIC
CHECK
TEST RUN
MODEL SELECT
NOT AVAILABLE
AM PM
ON/OFF
TEMP
FAN
AUTO STOP
MODE
VANE
AUTO START
CHECK
LOUVER
h
TEST RUN
min
SET
RESET
CLOCK

3 SPECIFICATIONS

Item / Service Ref.				PLH-3AAK(H)	
Function				Cooling	Heating
Capacity			Btu/h	26,300	28,700[35,800]
			W	7,700	8,400[10,500]
Total input			kW	3.32	3.11[5.21]
INDOOR UNIT	**Service Ref.**			**PLH-3AAK(H)**	
	Power supply(phase, cycle,voltage)			Single, 50Hz, 220-240V	
		Input	kW	0.17	0.17[2.27]
		Running current	A	0.81	0.81[9.47]
		Starting current	A	1.00	1.00[9.7]
	External finish			Grille : Munsell 0.70Y 8.59/0.97	
	Heat exchanger			Plate fin coil	
	Fan	Fan(drive) x No.		Turbo fan (direct) x 1	
		Fan motor output	kW	0.07	
		Airflow(Low-High)	m³/ min (CFM)	15-20(530-705)	
		External static pressure	Pa	0(direct blow)	
	Booster heater		kW	[2.1]	
	Operation control & Thermostat			Remote controller & built-in	
	Noise level(Low-High)		dB	28-34	
	Unit drain pipe O.D.		mm(in.)	32(1-1/4)	
	Dimensions	W	mm(in.)	UNIT : 840(33-1/6)	PANEL : 950(37-3/8)
		D	mm(in.)	UNIT : 840(33-1/6)	PANEL : 950(37-3/8)
		H	mm(in.)	UNIT : 258(10-1/8)	PANEL : 30(1-3/16)
	Weight		kg(lbs)	UNIT : 24(53) [26(57)]	PANEL : 5(11)
OUTDOOR UNIT	**Service Ref.**			**PUH-3VKA.TH, PUH-3VKA2.TH-A/PUH-3YKA.TH, PUH-3YKA1.TH-A**	
	Power supply (phase, cycle, voltage)			Single, 50Hz, 220-240V/3, 50Hz, 380-415V(4wires)	
		Input	kW	3.15	2.94
		Running current	A	13.82/5.16	12.89/4.81
		Starting current	A	58/37	58/37
	External finish			Munsell 5Y 7/1	
	Refrigerant control			Capillary tube	
	Compressor			Hermetic	
		Model		NH52VNHT/NH52YDAT	
		Motor output	kW	2.2/2.4	
		Starter type		Line start	
		Protection devices		※1	
	Heat exchanger			Plate fin coil	
	Fan	Fan(drive) x No.		Propeller (direct) x1	
		Fan motor output	kW	0.085	
		Airflow	m³/ min (CFM)	50(1764)	
	Defrost method			Reverse cycle	
	Noise level		dB	52	
	Dimensions	W	mm(in.)	870(34-1/4)	
		D	mm(in.)	295+24 (11-5/8 add 1)	
		H	mm(in.)	850(33-1/4)	
	Weight		kg(lbs)	75(165)	
REFRIGERANT PIPING	Refrigerant			R-22	
		Charge	kg(lbs)	3.2(7.1)	
		Oil<Model>	L	1.6<MS-32>	
	Pipe size O.D.	Liquid	mm(in.)	9.52 (3/8)	
		Gas	mm(in.)	15.88(5/8)	
	Connection method	Indoor side		Flared	
		Outdoor side		Flared	
	Between the indoor & outdoor units	Height difference		Max. 50m	
		Piping length		Max. 50m	

※1 V …Internal Thermostat, HP switch
Y …Anti-phase protector, thermal relay, thermal switch, HP switch

Notes: Rating condition (ISO T1<JIS B8616>)
Cooling: Indoor : D.B. 27°C, W.B. 19°C
Outdoor : D.B. 35°C, W.B. 24°C
Heating: Indoor : D.B. 20°C
Outdoor : D.B. 7°C, W.B. 6°C
Refrigerant piping length(one way):5m(16ft)

Item / Service Ref.				PLH-3AAK	
Function				Cooling ※1/※2	Heating ※1
Capacity			Btu/h	23,200/27,300	31,700
			W	6,800/8,000	9,300
Total input			kW	4.29/3.68	3.49
INDOOR UNIT	**Service Ref.**			**PLH-3AAK**	
	Power supply(phase, cycle,voltage)			Single, 60Hz, 220V	
		Input	kW	0.16	0.16
		Running current	A	0.77	0.77
		Starting current	A	1.00	1.00
	External finish			Grille : Munsell 0.70Y 8.59/0.97	
	Heat exchanger			Plate fin coil	
	Fan	Fan(drive) x No.		Turbo fan (direct) x 1	
		Fan motor output	kW	0.07	
		Airflow(Low-High)	m³/ min (CFM)	15-20(530-705)	
		External static pressure	Pa	0(direct blow)	
	Booster heater		kW	—	
	Operation control & Thermostat			Remote controller & built-in	
	Noise level(Low-High)		dB	28-34	
	Unit drain pipe O.D.		mm(in.)	32(1-1/4)	
	Dimensions	W	mm(in.)	UNIT : 840(33-1/6)	PANEL : 950(37-3/8)
		D	mm(in.)	UNIT : 840(33-1/6)	PANEL : 950(37-3/8)
		H	mm(in.)	UNIT : 258(10-1/8)	PANEL : 30(1-3/16)
	Weight		kg(lbs)	UNIT : 24(53)	PANEL : 5(11)
OUTDOOR UNIT	**Service Ref.**			**PUH-3NKA.TH**	
	Power supply (phase, cycle, voltage)			Single, 60Hz, 220V	
		Input	kW	4.13/3.52	3.33
		Running current	A	18.77/16.49	15.6
		Starting current	A	80	80
	External finish			Munsell 5Y 7/1	
	Refrigerant control			Capillary tube	
	Compressor			Hermetic	
		Model		NHJ47NADT	
		Motor output	kW	2.2	
		Starter type		Line start	
		Protection devices		Internal thermostat, HP switch	
	Heat exchanger			Plate fin coil	
	Fan	Fan(drive) x No.		Propeller (direct) x1	
		Fan motor output	kW	0.085	
		Airflow	m³/ min (CFM)	50(1764)	
	Defrost method			Reverse cycle	
	Noise level		dB	52	
	Dimensions	W	mm(in.)	870(34-1/4)	
		D	mm(in.)	295+24 (11-5/8 add 1)	
		H	mm(in.)	850(33-1/4)	
	Weight		kg(lbs)	78(172)	
REFRIGERANT PIPING	Refrigerant			R-22	
		Charge	kg(lbs)	3.2(7.1)	
		Oil<Model>	L	1.6<MS-32>	
	Pipe size O.D.	Liquid	mm(in.)	9.52 (3/8)	
		Gas	mm(in.)	15.88(5/8)	
	Connection method	Indoor side		Flared	
		Outdoor side		Flared	
	Between the indoor & outdoor units	Height difference		Max. 50m	
		Piping length		Max. 50m	

Notes : ※1.Rating condition (SSA 385)
Cooling: Indoor : D.B. 29°C, W.B. 19°C
Outdoor: D.B. 46°C, W.B. 24°C
Heating: Indoor : D.B. 21°C
Outdoor: D.B. 7°C, W.B. 6°C

※2.Rating condition (ISO T1<JIS 8616>)
Cooling: Indoor : D.B. 27°C, W.B. 19°C
Outdoor: D.B. 35°C, W.B. 24°C
Refrigerant piping length(one way):5m(16ft)

Item \ Service Ref.				PLH-4AAK(H)	
Function				Cooling	Heating
Capacity			Btu/h	33,100	35,500[44,400]
			W	9,700	10,400[13,000]
Total input			kW	3.46	3.45[6.05]
INDOOR UNIT	**Service Ref.**			**PLH-4AAK(H)**	
	Power supply(phase, cycle,voltage)			Single, 50Hz, 220-240V	
		Input	kW	0.26	0.26[2.86]
		Running current	A	1.25	1.25[11.93]
		Starting current	A	2.0	2.0[12.7]
	External finish			Grille : Munsell 0.70Y 8.59/0.97	
	Heat exchanger			Plate fin coil	
	Fan	Fan(drive) x No.		Turbo fan (direct) x 1	
		Fan motor output	kW	0.120	
		Airflow(Low-High)	m^3/ min (CFM)	20-28(705-990)	
		External static pressure	Pa	0(direct blow)	
	Booster heater		kW	[2.6]	
	Operation control & Thermostat			Remote controller & built-in	
	Noise level(Low-High)		dB	33-41	
	Unit drain pipe O.D.		mm(in.)	32(1-1/4)	
	Dimensions	W	mm(in.)	UNIT : 840(33-1/6)	PANEL : 950(37-3/8)
		D	mm(in.)	UNIT : 840(33-1/6)	PANEL : 950(37-3/8)
		H	mm(in.)	UNIT : 298(11-3/4)	PANEL : 30(1-3/16)
	Weight		kg(lbs)	UNIT : 30(66)[32(71)]	PANEL : 5(11)
OUTDOOR UNIT	**Service Ref.**			**PUH-4YKSA.TH, PUH-4YKSA1.TH-A**	
	Power supply (phase, cycle, voltage)			3, 50Hz, 380V-415V(4wire)	
		Input	kW	3.20	3.19
		Running current	A	5.24	5.22
		Starting current	A	40	40
	External finish			Munsell 5Y 7/1	
	Refrigerant control			Capillary tube	
	Compressor			Hermetic	
		Model		NH56YDAT	
		Motor output	kW	2.7	
		Starter type		Line start	
		Protection devices		Anti-phase protector, Thermal relay, Thermal switch, HP switch	
	Heat exchanger			Plate fin coil	
	Fan	Fan(drive) x No.		Propeller (direct) x2	
		Fan motor output	kW	0.065+0.065	
		Airflow	m^3/ min (CFM)	95(3550)	
	Defrost method			Reverse cycle	
	Noise level		dB	54	
	Dimensions	W	mm(in.)	870(34-1/4)	
		D	mm(in.)	295+24(11-5/8 add 1)	
		H	mm(in.)	1258(49-1/2)	
	Weight		kg(lbs)	94(207)	
REFRIGERANT PIPING	Refrigerant			R-22	
		Charge	kg(lbs)	4.2(9.2)	
		Oil<Model>	L	1.6<MS-32>	
	Pipe size O.D.	Liquid	mm(in.)	9.52(3/8)	
		Gas	mm(in.)	19.05(3/4)	
	Connection method	Indoor side		Flared	
		Outdoor side		Flared	
	Between the indoor & outdoor units	Height difference		Max. 50m	
		Piping length		Max. 50m	

Notes: Rating condition (ISO T1<JIS B8616>)
Cooling: Indoor : D.B. 27°C, W.B. 19°C
Outdoor : D.B. 35°C, W.B. 24°C
Heating: Indoor : D.B. 20°C
Outdoor : D.B. 7°C, W.B. 6°C
Refrigerant piping length(one way):5m(16ft)

Item / Service Ref.				PLH-4AAK	
Function				Cooling ※1/※2	Heating ※1
Capacity			Btu/h	33,800/37,400	41,300
			W	9,900/10,950	12,100
Total input			kW	5.26/4.93	4.21
INDOOR UNIT	**Service Ref.**			**PLH-4AAK**	
	Power supply(phase, cycle,voltage)			Single, 60Hz, 220V	
		Input	kW	0.25	0.25
		Running current	A	1.19	1.19
		Starting current	A	2.0	2.0
	External finish			Grille : Munsell 0.70Y 8.59/0.97	
	Heat exchanger			Plate fin coil	
	Fan	Fan(drive) x No.		Turbo fan (direct) x 1	
		Fan motor output	kW	0.120	
		Airflow(Low-High)	m³/ min (CFM)	20-28(705-990)	
		External static pressure	Pa	0(direct blow)	
	Booster heater		kW	—	
	Operation control & Thermostat			Remote controller & built-in	
	Noise level(Low-High)		dB	33-41	
	Unit drain pipe O.D.		mm(in.)	32(1-1/4)	
	Dimensions	W	mm(in.)	UNIT : 840(33-1/6)	PANEL : 950(37-3/8)
		D	mm(in.)	UNIT : 840(33-1/6)	PANEL : 950(37-3/8)
		H	mm(in.)	UNIT : 298(11-3/4)	PANEL : 30(1-3/16)
	Weight		kg(lbs)	UNIT : 30(66)	PANEL : 5(11)
OUTDOOR UNIT	**Service Ref.**			**PUH-4TKSA.TH**	
	Power supply (phase, cycle, voltage)			3, 60Hz, 220V	
		Input	kW	5.01/4.14	3.96
		Running current	A	14.14/11.81	11.3
		Starting current	A	69	69
	External finish			Munsell 5Y 7/1	
	Refrigerant control			Capillary tube	
	Compressor			Hermetic	
		Model		NHJ56TKAT	
		Motor output	kW	2.7	
		Starter type		Line start	
		Protection devices		Anti-phase protector, Thermal relay, Thermal switch, HP switch	
	Heat exchanger			Plate fin coil	
	Fan	Fan(drive) x No.		Propeller (direct) x2	
		Fan motor output	kW	0.065+0.065	
		Airflow	m³/ min (CFM)	95(3550)	
	Defrost method			Reverse cycle	
	Noise level		dB	55	
	Dimensions	W	mm(in.)	870(34-1/4)	
		D	mm(in.)	295+24(11-5/8 add 1)	
		H	mm(in.)	1258(49-1/2)	
	Weight		kg(lbs)	94(207)	
REFRIGERANT PIPING	Refrigerant			R-22	
		Charge	kg(lbs)	4.7(10.4)	
		Oil<Model>	L	1.6<MS-32>	
	Pipe size O.D.	Liquid	mm(in.)	9.52(3/8)	
		Gas	mm(in.)	19.05(3/4)	
	Connection method	Indoor side		Flared	
		Outdoor side		Flared	
	Between the indoor & outdoor units	Height difference		Max. 50m	
		Piping length		Max. 50m	

Notes: ※1.Rating condition (SSA 385)
Cooling: Indoor : D.B. 29°C, W.B. 19°C
Outdoor: D.B. 46°C, W.B. 24°C
Heating: Indoor : D.B. 21°C
Outdoor: D.B. 7°C, W.B. 6°C

※2.Rating condition (ISO T1<JIS 8616>)
Cooling: Indoor : D.B. 27°C, W.B. 19°C
Outdoor: D.B. 35°C, W.B. 24°C
Refrigerant piping length(one way):5m(16ft)

Item / Service Ref.				PLH-5AAK(H)	
Function				Cooling	Heating
Capacity			Btu/h	42,300	47,800[58,000]
			W	12,400	14,000[17,000]
Total input			kW	4.51	4.46[7.46]
INDOOR UNIT	**Service Ref.**			**PLH-5AAK(H)**	
	Power supply(phase, cycle,voltage)			Single, 50Hz, 220-240V	
		Input	kW	0.30	0.30[3.30]
		Running current	A	1.43	1.43[13.77]
		Starting current	A	2.0	2.0[14.3]
	External finish			Grille : Munsell 0.70Y 8.59/0.97	
	Heat exchanger			Plate fin coil	
	Fan	Fan(drive) x No.		Turbo fan (direct) x 1	
		Fan motor output	kW	0.120	
		Airflow(Low-High)	m³/ min (CFM)	22-30(775-1,060)	
		External static pressure	Pa	0(direct blow)	
	Booster heater		kW	[3.0]	
	Operation control & Thermostat			Remote controller & built-in	
	Noise level(Low-High)		dB	35-43	
	Unit drain pipe O.D.		mm(in.)	32(1-1/4)	
	Dimensions	W	mm(in.)	UNIT : 840(33-1/16)	PANEL : 950(37-3/8)
		D	mm(in.)	UNIT : 840(33-1/16)	PANEL : 950(37-3/8)
		H	mm(in.)	UNIT : 298(11-3/4)	PANEL : 30(1-3/16)
	Weight		kg(lbs)	UNIT : 30(66) [32(71)]	PANEL : 5(11)
OUTDOOR UNIT	**Service Ref.**			**PUH-5YKSA.TH, PUH-5YKSA3.TH-A**	
	Power supply (phase, cycle, voltage)			3, 50Hz, 380-415V(4wire)	
		Input	kW	4.21	4.16
		Running current	A	6.89	6.81
		Starting current	A	53	53
	External finish			Munsell 5Y 7/1	
	Refrigerant control			Capillary tube	
	Compressor			Hermetic	
		Model		ZR61KC-TFD	
		Motor output	kW	3.5	
		Starter type		Line start	
		Protection devices		Internal thermostat, Anti-phase protector, Thermal switch, HP switch	
	Heat exchanger			Plate fin coil	
	Fan	Fan(drive) x No.		Propeller (direct) x2	
		Fan motor output	kW	0.085+0.085	
		Airflow	m³/ min (CFM)	95(3550)	
	Defrost method			Reverse cycle	
	Noise level		dB	55	
	Dimensions	W	mm(in.)	970(38-3/16)	
		D	mm(in.)	345+24(13-9/16 add 1)	
		H	mm(in.)	1258(49-1/2)	
	Weight		kg(lbs)	114(251)	
REFRIGERANT PIPING	Refrigerant			R-22	
		Charge	kg(lbs)	5.4(11.9)	
		Oil<Model>	L	2.130<SONTEX-200LT>	
	Pipe size O.D.	Liquid	mm(in.)	9.52(3/8)	
		Gas	mm(in.)	19.05(3/4)	
	Connection method	Indoor side		Flared	
		Outdoor side		Flared	
	Between the indoor & outdoor units	Height difference		Max. 50m	
		Piping length		Max. 50m	

Notes: Rating condition (ISO T1<JIS B8616>)
Cooling: Indoor : D.B. 27°C, W.B. 19°C
Outdoor : D.B. 35°C, W.B. 24°C
Heating: Indoor : D.B. 20°C
Outdoor : D.B. 7°C, W.B. 6°C
Refrigerant piping length(one way):5m(16ft)

Item / Service Ref.				PLH-5AAK	
Function				Cooling ※1/※2	Heating ※1
Capacity			Btu/h	37,500/44,400	56,300
			W	11,000/13,000	16,500
Total input			kW	6.78/5.58	6.02
INDOOR UNIT	**Service Ref.**			**PLH-5AAK**	
	Power supply(phase, cycle,voltage)			Single, 60Hz, 220V	
		Input	kW	0.26	0.26
		Running current	A	1.24	1.24
		Starting current	A	2.0	2.0
	External finish			Grille : Munsell 0.70Y 8.59/0.97	
	Heat exchanger			Plate fin coil	
	Fan	Fan(drive) x No.		Turbo fan (direct) x 1	
		Fan motor output	kW	0.120	
		Airflow(Low-High)	m³/ min (CFM)	22-30(775-1,060)	
		External static pressure	Pa	0(direct blow)	
	Booster heater		kW	—	
	Operation control & Thermostat			Remote controller & built-in	
	Noise level(Low-High)		dB	35-43	
	Unit drain pipe O.D.		mm(in.)	32(1-1/4)	
	Dimensions	W	mm(in.)	UNIT : 840(33-1/16)	PANEL : 950(37-3/8)
		D	mm(in.)	UNIT : 840(33-1/16)	PANEL : 950(37-3/8)
		H	mm(in.)	UNIT : 298(11-3/4)	PANEL : 30(1-3/16)
	Weight		kg(lbs)	UNIT : 30(66)	PANEL :5(11)
OUTDOOR UNIT	**Service Ref.**			**PUH-5TKSA.TH**	
	Power supply (phase, cycle, voltage)			3, 60Hz, 220V	
		Input	kW	6.52/5.32	5.76
		Running current	A	19.23/16.23	17.38
		Starting current	A	135	135
	External finish			Munsell 5Y 7/1	
	Refrigerant control			Capillary tube	
	Compressor			Hermetic	
		Model		ZR61KC-TF5	
		Motor output	kW	3.5	
		Starter type		Line start	
		Protection devices		Internal thermostat, Anti-phase protector, Thermal switch, HP switch	
	Heat exchanger			Plate fin coil	
	Fan	Fan(drive) x No.		Propeller (direct) x2	
		Fan motor output	kW	0.100+0.100	
		Airflow	m³/ min (CFM)	100(3500)	
	Defrost method			Reverse cycle	
	Noise level		dB	55	
	Dimensions	W	mm(in.)	970(38-3/16)	
		D	mm(in.)	345+24(13-9/16 add 1)	
		H	mm(in.)	1258(49-1/2)	
	Weight		kg(lbs)	114(251)	
REFRIGERANT PIPING	Refrigerant			R-22	
		Charge	kg(lbs)	5.4(11.9)	
		Oil<Model>	L	2.13<SONTEX-200LT>	
	Pipe size O.D.	Liquid	mm(in.)	9.52(3/8)	
		Gas	mm(in.)	19.05(3/4)	
	Connection method	Indoor side		Flared	
		Outdoor side		Flared	
	Between the indoor & outdoor units	Height difference		Max. 50m	
		Piping length		Max. 50m	

Notes: ※1.Rating condition (SSA 385)
Cooling: Indoor : D.B. 29°C, W.B. 19°C
Outdoor: D.B. 46°C, W.B. 24°C
Heating: Indoor : D.B. 21°C
Outdoor: D.B. 7°C, W.B. 6°C

※2.Rating condition (ISO T1<JIS 8616>)
Cooling: Indoor : D.B. 27°C, W.B. 19°C
Outdoor: D.B. 35°C, W.B. 24°C
Refrigerant piping length(one way):5m(16ft)

Item \ Service Ref.				PLH-6AAK(H)	
Function				Cooling	Heating
Capacity			Btu/h	47,800	54,900[65,200]
			W	14,000	16,100[19,100]
Total input			kW	5.07	4.92[7.92]
INDOOR UNIT	**Service Ref.**			**PLH-6AAK(H)**	
	Power supply(phase, cycle,voltage)			Single, 50Hz, 220-240V	
		Input	kW	0.34	0.34[3.34]
		Running current	A	1.64	1.64[13.94]
		Starting current	A	2.0	2.0[14.3]
	External finish			Grille : Munsell 0.70Y 8.59/0.97	
	Heat exchanger			Plate fin coil	
	Fan	Fan(drive) x No.		Turbo fan (direct) x 1	
		Fan motor output	kW	0.120	
		Airflow(Low-High)	m³/ min (CFM)	22-30(775-1,060)	
		External static pressure	Pa	0(direct blow)	
	Booster heater		kW	[3.0]	
	Operation control & Thermostat			Remote controller & built-in	
	Noise level(Low-High)		dB	37-45	
	Unit drain pipe O.D.		mm(in.)	32(1-1/4)	
	Dimensions	W	mm(in.)	UNIT : 840(33-1/16)	PANEL : 950(37-3/8)
		D	mm(in.)	UNIT : 840(33-1/16)	PANEL : 950(37-3/8)
		H	mm(in.)	UNIT : 298(11-3/4)	PANEL : 30(1-3/16)
	Weight		kg(lbs)	UNIT : 32(71)[34(75)]	PANEL : 5(11)
OUTDOOR UNIT	**Service Ref.**			**PUH-6YKSA.TH, PUH-6YKSA3.TH-A**	
	Power supply (phase, cycle, voltage)			3, 50Hz, 380-415V(4wire)	
		Input	kW	4.73	4.58
		Running current	A	7.74	7.50
		Starting current	A	74	74
	External finish			Munsell 5Y 7/1	
	Refrigerant control			Capillary tube	
	Compressor			Hermetic	
		Model		ZR68KC-TFD	
		Motor output	kW	4.0	
		Starter type		Line start	
		Protection devices		Internal thermostat, Anti-phase protector, Thermal switch, HP switch	
	Heat exchanger			Plate fin coil	
	Fan	Fan(drive) x No.		Propeller (direct) x2	
		Fan motor output	kW	0.10+0.10	
		Airflow	m³/ min (CFM)	100(3530)	
	Defrost method			Reverse cycle	
	Noise level		dB	56	
	Dimensions	W	mm(in.)	970(38-3/16)	
		D	mm(in.)	345+24(13-9/16 add 1)	
		H	mm(in.)	1258(49-1/2)	
	Weight		kg(lbs)	117(258)	
REFRIGERANT PIPING	Refrigerant			R-22	
		Charge	kg(lbs)	5.0(11.0)	
		Oil<Model>	L	1.774<SONTEX-200LT>	
	Pipe size O.D.	Liquid	mm(in.)	9.52(3/8)	
		Gas	mm(in.)	19.05(3/4)	
	Connection method	Indoor side		Flared	
		Outdoor side		Flared	
	Between the indoor & outdoor units	Height difference		Max. 50m	
		Piping length		Max. 50m	

Notes: Rating condition (ISO T1<JIS B8616>)
Cooling: Indoor : D.B. 27°C, W.B. 19°C
Outdoor : D.B. 35°C, W.B. 24°C
Heating: Indoor : D.B. 20°C
Outdoor : D.B. 7°C, W.B. 6°C
Refrigerant piping length(one way):5m(16ft)

Item / Service Ref.				PLH-6AAK	
Function				Cooling ※1/※2	Heating ※1
Capacity			Btu/h	45,700/51,900	59,700
			W	13,400/15,200	17,500
Total input			kW	7.32/6.15	6.7
INDOOR UNIT	**Service Ref.**			**PLH-6AAK**	
	Power supply(phase, cycle,voltage)			Single, 60Hz, 220V	
		Input	kW	0.28	0.28
		Running current	A	1.34	1.34
		Starting current	A	2.0	2.0
	External finish			Grille : Munsell 0.70Y 8.59/0.97	
	Heat exchanger			Plate fin coil	
	Fan	Fan(drive) x No.		Turbo fan (direct) x 1	
		Fan motor output	kW	0.120	
		Airflow(Low-High)	m³/ min (CFM)	22-30(775-1,060)	
		External static pressure	Pa	0(direct blow)	
	Booster heater		kW	—	
	Operation control & Thermostat			Remote controller & built-in	
	Noise level(Low-High)		dB	37-45	
	Unit drain pipe O.D.		mm(in.)	32(1-1/4)	
	Dimensions	W	mm(in.)	UNIT : 840(33-1/16)	PANEL : 950(37-3/8)
		D	mm(in.)	UNIT : 840(33-1/16)	PANEL : 950(37-3/8)
		H	mm(in.)	UNIT : 298(11-3/4)	PANEL : 30(1-3/16)
	Weight		kg(lbs)	UNIT : 32(71)	PANEL :5(11)
OUTDOOR UNIT	**Service Ref.**			**PUH-6TKSA.TH**	
	Power supply (phase, cycle, voltage)			3, 60Hz, 220V	
		Input	kW	7.04/5.87	6.42
		Running current	A	20.3/17.31	18.51
		Starting current	A	140	140
	External finish			Munsell 5Y 7/1	
	Refrigerant control			Capillary tube	
	Compressor			Hermetic	
		Model		ZR68KC-TF5	
		Motor output	kW	4.0	
		Starter type		Line start	
		Protection devices		Internal thermostat, Anti-phase protector, Thermal switch, HP switch	
	Heat exchanger			Plate fin coil	
	Fan	Fan(drive) x No.		Propeller (direct) x2	
		Fan motor output	kW	0.10+0.10	
		Airflow	m³/ min (CFM)	100(3530)	
	Defrost method			Reverse cycle	
	Noise level		dB	56	
	Dimensions	W	mm(in.)	970(38-3/16)	
		D	mm(in.)	345+24(13-9/16 add 1)	
		H	mm(in.)	1258(49-1/2)	
	Weight		kg(lbs)	117(258)	
REFRIGERANT PIPING	Refrigerant			R-22	
		Charge	kg(lbs)	5.0(11.0)	
		Oil<Model>	L	1.774<SONTEX-200LT>	
	Pipe size O.D.	Liquid	mm(in.)	9.52(3/8)	
		Gas	mm(in.)	19.05(3/4)	
	Connection method	Indoor side		Flared	
		Outdoor side		Flared	
	Between the indoor & outdoor units	Height difference		Max. 50m	
		Piping length		Max. 50m	

Notes: ※1.Rating condition (SSA 385)
Cooling: Indoor : D.B. 29°C, W.B. 19°C
Outdoor: D.B. 46°C, W.B. 24°C
Heating: Indoor : D.B. 21°C
Outdoor: D.B. 7°C, W.B. 6°C

※2.Rating condition (ISO T1<JIS 8616>)
Cooling: Indoor : D.B. 27°C, W.B. 19°C
Outdoor: D.B. 35°C, W.B. 24°C
Refrigerant piping length(one way):5m(16ft)

4 DATA

1. PERFORMANCE DATA [50Hz]

1) COOLING CAPACITY(1)

PLH-3AAK(H)

Indoor Intake air D.B.(°C)	Indoor Intake air W.B.(°C)	Outdoor intake air D.B.(°C)											
		20				25				30			
		CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
20	16	7768	4972	0.64	2.66	7555	4835	0.64	2.77	7278	4658	0.64	2.99
20	18	8271	4301	0.52	2.71	8053	4188	0.52	2.83	7760	4035	0.52	3.06
22	16	7768	5593	0.72	2.66	7555	5440	0.72	2.77	7278	5240	0.72	2.99
22	18	8271	4963	0.60	2.71	8053	4832	0.60	2.83	7760	4656	0.60	3.06
22	20	8779	4214	0.48	2.77	8573	4115	0.48	2.89	8267	3968	0.48	3.12
24	16	7768	6214	0.80	2.66	7555	6044	0.80	2.77	7278	5822	0.80	2.99
24	18	8271	5624	0.68	2.71	8053	5476	0.68	2.83	7760	5277	0.68	3.06
24	20	8779	4916	0.56	2.77	8573	4801	0.56	2.89	8267	4630	0.56	3.12
24	22	9293	4089	0.44	2.82	9115	4011	0.44	2.94	8799	3872	0.44	3.19
26	16	7768	6836	0.88	2.66	7555	6649	0.88	2.77	7278	6404	0.88	2.99
26	18	8271	6286	0.76	2.71	8053	6120	0.76	2.83	7760	5898	0.76	3.06
26	20	8779	5619	0.64	2.77	8573	5487	0.64	2.89	8267	5291	0.64	3.12
26	22	9293	4832	0.52	2.82	9115	4740	0.52	2.94	8799	4576	0.52	3.19
27	16	7768	7147	0.92	2.66	7555	6951	0.92	2.77	7278	6696	0.92	2.99
27	18	8271	6617	0.80	2.71	8053	6443	0.80	2.83	7760	6208	0.80	3.06
27	20	8779	5970	0.68	2.77	8573	5830	0.68	2.89	8267	5622	0.64	3.12
27	22	9293	5204	0.56	2.82	9115	5104	0.56	2.94	8799	4928	0.52	3.19
28	16	7768	7457	0.96	2.66	7555	7253	0.96	2.77	7278	6987	0.96	2.99
28	18	8271	6948	0.84	2.71	8053	6765	0.84	2.83	7760	6518	0.84	3.06
28	20	8779	6321	0.72	2.77	8573	6173	0.72	2.89	8267	5952	0.72	3.12
28	22	9293	5576	0.60	2.82	9115	5469	0.60	2.94	8799	5279	0.60	3.19
30	16	7768	7768	1.00	2.66	7555	7555	1.00	2.77	7278	7278	1.00	2.99
30	18	8271	7609	0.92	2.71	8053	7409	0.92	2.83	7760	7139	0.92	3.06
30	20	8779	7023	0.80	2.77	8573	6858	0.80	2.89	8267	6614	0.80	3.12
30	22	9293	6319	0.68	2.82	9115	6198	0.68	2.94	8799	5983	0.68	3.19
32	16	7768	7768	1.00	2.66	7555	7555	1.00	2.77	7278	7278	1.00	2.99
32	18	8271	8271	1.00	2.71	8053	8053	1.00	2.83	7760	7760	1.00	3.06
32	20	8779	7726	0.88	2.77	8573	7544	0.88	2.89	8267	7275	0.88	3.12
32	22	9293	7063	0.76	2.82	9115	6927	0.76	2.94	8799	6687	0.76	3.19

CA : Capacity (W)
SHC : Sensible heat capacity (W)
P.C. : Power consumption (kW)
SHF : Sensible heat factor

COOLING CAPACITY(2)
PLH-3AAK(H)

Indoor Intake air D.B.(°C)	Indoor Intake air W.B.(°C)	Outdoor intake air D.B.(°C)											
		35				40				45			
		CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
20	16	6983	4469	0.64	3.20	6671	4269	0.64	3.42	6342	4059	0.64	3.64
20	18	7452	3875	0.52	3.28	7130	3708	0.52	3.51	6793	3532	0.52	3.73
22	16	6983	5028	0.72	3.20	6671	4803	0.72	3.42	6342	4566	0.72	3.64
22	18	7452	4471	0.60	3.28	7130	4278	0.60	3.51	6793	4076	0.60	3.73
22	20	7948	3815	0.48	3.36	7616	3656	0.48	3.60	7270	3490	0.48	3.84
24	16	6983	5586	0.80	3.20	6671	5337	0.80	3.42	6342	5073	0.80	3.64
24	18	7452	5067	0.68	3.28	7130	4848	0.68	3.51	6793	4619	0.68	3.73
24	20	7948	4451	0.56	3.36	7616	4265	0.56	3.60	7270	4071	0.56	3.84
24	22	8470	3727	0.44	3.44	8128	3576	0.44	3.70	7773	3420	0.44	3.97
26	16	6983	6145	0.88	3.20	6671	5870	0.88	3.42	6342	5581	0.88	3.64
26	18	7452	5664	0.76	3.28	7130	5419	0.76	3.51	6793	5163	0.76	3.73
26	20	7948	5087	0.64	3.36	7616	4874	0.64	3.60	7270	4653	0.64	3.84
26	22	8470	4405	0.52	3.44	8128	4227	0.52	3.70	7773	4042	0.52	3.97
27	16	6983	6424	0.92	3.20	6671	6137	0.92	3.42	6342	5834	0.92	3.64
27	18	7452	5962	0.80	3.28	7130	5704	0.80	3.51	6793	5434	0.80	3.73
27	20	7948	5405	0.68	3.36	7616	5179	0.68	3.60	7270	4944	0.64	3.84
27	22	8470	4743	0.56	3.44	8128	4552	0.56	3.70	7773	4353	0.52	3.97
28	16	6983	6704	0.96	3.20	6671	6404	0.96	3.42	6342	6088	0.96	3.64
28	18	7452	6260	0.84	3.28	7130	5989	0.84	3.51	6793	5706	0.84	3.73
28	20	7948	5722	0.72	3.36	7616	5483	0.72	3.60	7270	5235	0.72	3.84
28	22	8470	5082	0.60	3.44	8128	4877	0.60	3.70	7773	4664	0.60	3.97
30	16	6983	6983	1.00	3.20	6671	6671	1.00	3.42	6342	6342	1.00	3.64
30	18	7452	6856	0.92	3.28	7130	6559	0.92	3.51	6793	6250	0.92	3.73
30	20	7948	6358	0.80	3.36	7616	6093	0.80	3.60	7270	5816	0.80	3.84
30	22	8470	5760	0.68	3.44	8128	5527	0.68	3.70	7773	5286	0.68	3.97
32	16	6983	6983	1.00	3.20	6671	6671	1.00	3.42	6342	6342	1.00	3.64
32	18	7452	7452	1.00	3.28	7130	7130	1.00	3.51	6793	6793	1.00	3.73
32	20	7948	6994	0.88	3.36	7616	6702	0.88	3.60	7270	6398	0.88	3.84
32	22	8470	6437	0.76	3.44	8128	6178	0.76	3.70	7773	5908	0.76	3.97

CA : Capacity (W)　　SHC : Sensible heat capacity (W)
P.C. : Power consumption (kW)　　SHF : Sensible heat factor

COOLING CAPACITY(3)
PLH-4AAK(H)

Indoor Intake air D.B.(°C)	Indoor Intake air W.B.(°C)	Outdoor intake air D.B.(°C)											
		20				25				30			
		CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
20	16	9786	6752	0.69	2.77	9518	6567	0.69	2.89	9168	6326	0.69	3.11
20	18	10419	5939	0.57	2.83	10145	5783	0.57	2.95	9775	5572	0.57	3.18
22	16	9786	7535	0.77	2.77	9518	7329	0.77	2.89	9168	7059	0.77	3.11
22	18	10419	6773	0.65	2.83	10145	6594	0.65	2.95	9775	6354	0.65	3.18
22	20	11060	5862	0.53	2.88	10800	5724	0.53	3.01	10414	5520	0.53	3.25
24	16	9786	8318	0.85	2.77	9518	8090	0.85	2.89	9168	7793	0.85	3.11
24	18	10419	7606	0.73	2.83	10145	7406	0.73	2.95	9775	7136	0.73	3.18
24	20	11060	6746	0.61	2.88	10800	6588	0.61	3.01	10414	6353	0.61	3.25
24	22	11707	5736	0.49	2.94	11482	5626	0.49	3.07	11085	5431	0.49	3.32
26	16	9786	9101	0.93	2.77	9518	8852	0.93	2.89	9168	8526	0.93	3.11
26	18	10419	8440	0.81	2.83	10145	8217	0.81	2.95	9775	7918	0.81	3.18
26	20	11060	7631	0.69	2.88	10800	7452	0.69	3.01	10414	7186	0.69	3.25
26	22	11707	6673	0.57	2.94	11482	6545	0.57	3.07	11085	6318	0.57	3.32
27	16	9786	9492	0.97	2.77	9518	9232	0.97	2.89	9168	8893	0.97	3.11
27	18	10419	8856	0.85	2.83	10145	8623	0.85	2.95	9775	8309	0.85	3.18
27	20	11060	8073	0.73	2.88	10800	7884	0.73	3.01	10414	7602	0.73	3.25
27	22	11707	7141	0.61	2.94	11482	7004	0.61	3.07	11085	6762	0.61	3.32
28	16	9786	9786	1.00	2.77	9518	9518	1.00	2.89	9168	9168	1.00	3.11
28	18	10419	9273	0.89	2.83	10145	9029	0.89	2.95	9775	8700	0.89	3.18
28	20	11060	8516	0.77	2.88	10800	8316	0.77	3.01	10414	8019	0.77	3.25
28	22	11707	7609	0.65	2.94	11482	7464	0.65	3.07	11085	7205	0.65	3.32
30	16	9786	9786	1.00	2.77	9518	9518	1.00	2.89	9168	.9168	1.00	3.11
30	18	10419	10107	0.97	2.83	10145	9841	0.97	2.95	9775	9482	0.97	3.18
30	20	11060	9401	0.85	2.88	10800	9180	0.85	3.01	10414	8852	0.85	3.25
30	22	11707	8546	0.73	2.94	11482	8382	0.73	3.07	11085	8092	0.73	3.32
32	16	9786	9786	1.00	2.77	9518	9518	1.00	2.89	9168	9168	1.00	3.11
32	18	10419	10419	1.00	2.83	10145	10145	1.00	2.95	9775	9775	1.00	3.18
32	20	11060	10285	0.93	2.88	10800	10044	0.93	3.01	10414	9685	0.93	3.25
32	22	11707	9483	0.81	2.94	11482	9301	0.81	3.07	11085	8979	0.81	3.32

CA : Capacity (W)
SHC : Sensible heat capacity (W)
P.C. : Power consumption (kW)
SHF : Sensible heat factor

COOLING CAPACITY(4)
PLH-4AAK(H)

Indoor Intake air D.B.(°C)	Indoor Intake air W.B.(°C)	Outdoor intake air D.B.(°C)											
		35				40				45			
		CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
20	16	8797	6070	0.69	3.34	8404	5798	0.69	3.56	7989	5512	0.69	3.79
20	18	9388	5351	0.57	3.42	8982	5120	0.57	3.65	8558	4878	0.57	3.89
22	16	8797	6773	0.77	3.34	8404	6471	0.77	3.56	7989	6151	0.77	3.79
22	18	9388	6102	0.65	3.42	8982	5838	0.65	3.65	8558	5562	0.65	3.89
22	20	10012	5307	0.53	3.50	9594	5085	0.53	3.75	9159	4854	0.53	4.00
24	16	8797	7477	0.85	3.34	8404	7143	0.85	3.56	7989	6790	0.85	3.79
24	18	9388	6853	0.73	3.42	8982	6557	0.73	3.65	8558	6247	0.73	3.89
24	20	10012	6107	0.61	3.50	9594	5852	0.61	3.75	9159	5587	0.61	4.00
24	22	10670	5228	0.49	3.59	10240	5017	0.49	3.86	9792	4798	0.49	4.14
26	16	8797	8181	0.93	3.34	8404	7815	0.93	3.56	7989	7430	0.93	3.79
26	18	9388	7604	0.81	3.42	8982	7275	0.81	3.65	8558	6932	0.81	3.89
26	20	10012	6908	0.69	3.50	9594	6620	0.69	3.75	9159	6320	0.69	4.00
26	22	10670	6082	0.57	3.59	10240	5837	0.57	3.86	9792	5582	0.57	4.14
27	16	8797	8533	0.97	3.34	8404	8151	0.97	3.56	7989	7749	0.97	3.79
27	18	9388	7980	0.85	3.42	8982	7634	0.85	3.65	8558	7274	0.85	3.89
27	20	10012	7309	0.73	3.50	9594	7003	0.73	3.75	9159	6686	0.73	4.00
27	22	10670	6509	0.61	3.59	10240	6246	0.61	3.86	9792	5973	0.61	4.14
28	16	8797	8797	1.00	3.34	8404	8404	1.00	3.56	7989	7989	1.00	3.79
28	18	9388	8355	0.89	3.42	8982	7994	0.89	3.65	8558	7616	0.89	3.89
28	20	10012	7709	0.77	3.50	9594	7387	0.77	3.75	9159	7052	0.77	4.00
28	22	10670	6936	0.65	3.59	10240	6656	0.65	3.86	9792	6365	0.65	4.14
30	16	8797	8797	1.00	3.34	8404	8404	1.00	3.56	7989	7989	1.00	3.79
30	18	9388	9106	0.97	3.42	8982	8712	0.97	3.65	8558	8301	0.97	3.89
30	20	10012	8510	0.85	3.50	9594	8155	0.85	3.75	9159	7785	0.85	4.00
30	22	10670	7789	0.73	3.59	10240	7475	0.73	3.86	9792	7148	0.73	4.14
32	16	8797	8797	1.00	3.34	8404	8404	1.00	3.56	7989	7989	1.00	3.79
32	18	9388	9388	1.00	3.42	8982	8982	1.00	3.65	8558	8558	1.00	3.89
32	20	10012	9311	0.93	3.50	9594	8922	0.93	3.75	9159	8518	0.93	4.00
32	22	10670	8643	0.81	3.59	10240	8294	0.81	3.86	9792	7932	0.81	4.14

CA : Capacity (W)　　SHC : Sensible heat capacity (W)
P.C. : Power consumption (kW)　　SHF : Sensible heat factor

COOLING CAPACITY(5)
PLH-5AAK(H)

Indoor Intake air D.B.(°C)	Indoor Intake air W.B.(°C)	Outdoor intake air D.B.(°C)											
		20				25				30			
		CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
20	16	12510	7881	0.63	3.61	12167	7665	0.63	3.77	11720	7384	0.63	4.06
20	18	13319	6793	0.51	3.69	12969	6614	0.51	3.85	12496	6373	0.51	4.15
22	16	12510	8882	0.71	3.61	12167	8639	0.71	3.77	11720	8321	0.71	4.06
22	18	13319	7858	0.59	3.69	12969	7652	0.59	3.85	12496	7373	0.59	4.15
22	20	14138	6645	0.47	3.76	13806	6489	0.47	3.92	13313	6257	0.47	4.24
24	16	12510	9883	0.79	3.61	12167	9612	0.79	3.77	11720	9259	0.79	4.06
24	18	13319	8924	0.67	3.69	12969	8689	0.67	3.85	12496	8373	0.67	4.15
24	20	14138	7776	0.55	3.76	13806	7593	0.55	3.92	13313	7322	0.55	4.24
24	22	14965	6435	0.43	3.83	14679	6312	0.43	4.00	14170	6093	0.43	4.33
26	16	12510	10883	0.87	3.61	12167	10585	0.87	3.77	11720	10196	0.87	4.06
26	18	13319	9990	0.75	3.69	12969	9727	0.75	3.85	12496	9372	0.75	4.15
26	20	14138	8907	0.63	3.76	13806	8698	0.63	3.92	13313	8387	0.63	4.24
26	22	14965	7632	0.51	3.83	14679	7486	0.51	4.00	14170	7227	0.51	4.33
27	16	12510	11384	0.91	3.61	12167	11072	0.91	3.77	11720	10665	0.91	4.06
27	18	13319	10522	0.79	3.69	12969	10245	0.79	3.85	12496	9872	0.79	4.15
27	20	14138	9472	0.67	3.76	13806	9250	0.67	3.92	13313	8920	0.67	4.24
27	22	14965	8231	0.55	3.83	14679	8073	0.55	4.00	14170	7794	0.55	4.33
28	16	12510	11884	0.95	3.61	12167	11559	0.95	3.77	11720	11134	0.95	4.06
28	18	13319	11055	0.83	3.69	12969	10764	0.83	3.85	12496	10372	0.83	4.15
28	20	14138	10038	0.71	3.76	13806	9802	0.71	3.92	13313	9452	0.71	4.24
28	22	14965	8830	0.59	3.83	14679	8660	0.59	4.00	14170	8360	0.59	4.33
30	16	12510	12510	1.00	3.61	12167	12167	1.00	3.77	11720	11720	1.00	4.06
30	18	13319	12121	0.91	3.69	12969	11802	0.91	3.85	12496	11372	0.91	4.15
30	20	14138	11169	0.79	3.76	13806	10907	0.79	3.92	13313	10517	0.79	4.24
30	22	14965	10027	0.67	3.83	14679	9835	0.67	4.00	14170	9494	0.67	4.33
32	16	12510	12510	1.00	3.61	12167	12167	1.00	3.77	11720	11720	1.00	4.06
32	18	13319	13186	0.99	3.69	12969	12839	0.99	3.85	12496	12371	0.99	4.15
32	20	14138	12300	0.87	3.76	13806	12011	0.87	3.92	13313	11582	0.87	4.24
32	22	14965	11224	0.75	3.83	14679	11009	0.75	4.00	14170	10628	0.75	4.33

CA : Capacity (W)
SHC : Sensible heat capacity (W)
P.C. : Power consumption (kW)
SHF : Sensible heat factor

COOLING CAPACITY(6)
PLH-5AAK(H)

Indoor Intake air D.B.(°C)	Indoor Intake air W.B.(°C)	Outdoor intake air D.B.(°C)											
		35				40				45			
		CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
20	16	11245	7085	0.63	4.35	10743	6768	0.63	4.64	10212	6434	0.63	4.94
20	18	12001	6120	0.51	4.46	11482	5856	0.51	4.76	10939	5579	0.51	5.07
22	16	11245	7984	0.71	4.35	10743	7627	0.71	4.64	10212	7251	0.71	4.94
22	18	12001	7080	0.59	4.46	11482	6774	0.59	4.76	10939	6454	0.59	5.07
22	20	12799	6016	0.47	4.56	12264	5764	0.47	4.89	11708	5503	0.47	5.22
24	16	11245	8884	0.79	4.35	10743	8487	0.79	4.64	10212	8068	0.79	4.94
24	18	12001	8041	0.67	4.46	11482	7693	0.67	4.76	10939	7329	0.67	5.07
24	20	12799	7040	0.55	4.56	12264	6745	0.55	4.89	11708	6439	0.55	5.22
24	22	13640	5865	0.43	4.67	13090	5629	0.43	5.03	12518	5383	0.43	5.39
26	16	11245	9783	0.87	4.35	10743	9346	0.87	4.64	10212	8885	0.87	4.94
26	18	12001	9001	0.75	4.46	11482	8611	0.75	4.76	10939	8205	0.75	5.07
26	20	12799	8064	0.63	4.56	12264	7726	0.63	4.89	11708	7376	0.63	5.22
26	22	13640	6957	0.51	4.67	13090	6676	0.51	5.03	12518	6384	0.51	5.39
27	16	11245	10233	0.91	4.35	10743	9776	0.91	4.64	10212	9293	0.91	4.94
27	18	12001	9481	0.79	4.46	11482	9071	0.79	4.76	10939	8642	0.79	5.07
27	20	12799	8575	0.67	4.56	12264	8217	0.67	4.89	11708	7844	0.67	5.22
27	22	13640	7502	0.55	4.67	13090	7199	0.55	5.03	12518	6885	0.55	5.39
28	16	11245	10683	0.95	4.35	10743	10206	0.95	4.64	10212	9702	0.95	4.94
28	18	12001	9961	0.83	4.46	11482	9530	0.83	4.76	10939	9080	0.83	5.07
28	20	12799	9087	0.71	4.56	12264	8708	0.71	4.89	11708	8313	0.71	5.22
28	22	13640	8048	0.59	4.67	13090	7723	0.59	5.03	12518	7386	0.59	5.39
30	16	11245	11245	1.00	4.35	10743	10743	1.00	4.64	10212	10212	1.00	4.94
30	18	12001	10921	0.91	4.46	11482	10448	0.91	4.76	10939	9955	0.91	5.07
30	20	12799	10111	0.79	4.56	12264	9689	0.79	4.89	11708	9249	0.79	5.22
30	22	13640	9139	0.67	4.67	13090	8770	0.67	5.03	12518	8387	0.67	5.39
32	16	11245	11245	1.00	4.35	10743	10743	1.00	4.64	10212	10212	1.00	4.94
32	18	12001	11881	0.99	4.46	11482	11367	0.99	4.76	10939	10830	0.99	5.07
32	20	12799	11135	0.87	4.56	12264	10670	0.87	4.89	11708	10186	0.87	5.22
32	22	13640	10230	0.75	4.67	13090	9817	0.75	5.03	12518	9389	0.75	5.39

CA : Capacity (W)
SHC : Sensible heat capacity (W)
P.C. : Power consumption (kW)
SHF : Sensible heat factor

COOLING CAPACITY(7)
PLH-6AAK(H)

Indoor Intake air D.B.(°C)	Indoor Intake air W.B.(°C)	Outdoor intake air D.B.(°C)											
		20				25				30			
		CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
20	16	14124	8616	0.61	4.06	13737	8380	0.61	4.24	13232	8072	0.61	4.56
20	18	15038	7369	0.49	4.15	14642	7175	0.49	4.32	14109	6913	0.49	4.67
22	16	14124	9745	0.69	4.06	13737	9479	0.69	4.24	13232	9130	0.69	4.56
22	18	15038	8572	0.57	4.15	14642	8346	0.57	4.32	14109	8042	0.57	4.67
22	20	15962	7183	0.45	4.22	15587	7014	0.45	4.41	15031	6764	0.45	4.77
24	16	14124	10875	0.77	4.06	13737	10578	0.77	4.24	13232	10189	0.77	4.56
24	18	15038	9775	0.65	4.15	14642	9517	0.65	4.32	14109	9171	0.65	4.67
24	20	15962	8460	0.53	4.22	15587	8261	0.53	4.41	15031	7966	0.53	4.77
24	22	16896	6928	0.41	4.30	16573	6795	0.41	4.50	15998	6559	0.41	4.87
26	16	14124	12005	0.85	4.06	13737	11677	0.85	4.24	13232	11247	0.85	4.56
26	18	15038	10978	0.73	4.15	14642	10689	0.73	4.32	14109	10299	0.73	4.67
26	20	15962	9737	0.61	4.22	15587	9508	0.61	4.41	15031	9169	0.61	4.77
26	22	16896	8279	0.49	4.30	16573	8121	0.49	4.50	15998	7839	0.49	4.87
27	16	14124	12570	0.89	4.06	13737	12226	0.89	4.24	13232	11777	0.89	4.56
27	18	15038	11579	0.77	4.15	14642	11274	0.77	4.32	14109	10864	0.77	4.67
27	20	15962	10375	0.65	4.22	15587	10132	0.65	4.41	15031	9770	0.65	4.77
27	22	16896	8955	0.53	4.30	16573	8783	0.53	4.50	15998	8479	0.53	4.87
28	16	14124	13135	0.93	4.06	13737	12776	0.93	4.24	13232	12306	0.93	4.56
28	18	15038	12181	0.81	4.15	14642	11860	0.81	4.32	14109	11428	0.81	4.67
28	20	15962	11014	0.69	4.22	15587	10755	0.69	4.41	15031	10371	0.69	4.77
28	22	16896	9631	0.57	4.30	16573	9446	0.57	4.50	15998	9119	0.57	4.87
30	16	14124	14124	1.00	4.06	13737	13737	1.00	4.24	13232	13232	1.00	4.56
30	18	15038	13384	0.89	4.15	14642	13031	0.89	4.32	14109	12557	0.89	4.67
30	20	15962	12291	0.77	4.22	15587	12002	0.77	4.41	15031	11574	0.77	4.77
30	22	16896	10983	0.65	4.30	16573	10772	0.65	4.50	15998	10399	0.65	4.87
32	16	14124	14124	1.00	4.06	13737	13737	1.00	4.24	13232	13232	1.00	4.56
32	18	15038	14587	0.97	4.15	14642	14203	0.97	4.32	14109	13686	0.97	4.67
32	20	15962	13568	0.85	4.22	15587	13249	0.85	4.41	15031	12776	0.85	4.77
32	22	16896	12334	0.73	4.30	16573	12098	0.73	4.50	15998	11679	0.73	4.87

CA : Capacity (W)
SHC : Sensible heat capacity (W)
P.C. : Power consumption (kW)
SHF : Sensible heat factor

COOLING CAPACITY(8)
PLH-6AAK(H)

Indoor Intake air D.B.(°C)	Indoor Intake air W.B.(°C)	Outdoor intake air D.B.(°C)											
		35				40				45			
		CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
20	16	12696	7745	0.61	4.89	12129	7399	0.61	5.22	11530	7033	0.61	5.55
20	18	13549	6639	0.49	5.01	12963	6352	0.49	5.35	12351	6052	0.49	5.70
22	16	12696	8760	0.69	4.89	12129	8369	0.69	5.22	11530	7956	0.69	5.55
22	18	13549	7723	0.57	5.01	12963	7389	0.57	5.35	12351	7040	0.57	5.70
22	20	14451	6503	0.45	5.13	13847	6231	0.45	5.50	13219	5948	0.45	5.87
24	16	12696	9776	0.77	4.89	12129	9339	0.77	5.22	11530	8878	0.77	5.55
24	18	13549	8807	0.65	5.01	12963	8426	0.65	5.35	12351	8028	0.65	5.70
24	20	14451	7659	0.53	5.13	13847	7339	0.53	5.50	13219	7006	0.53	5.87
24	22	15401	6314	0.41	5.25	14779	6059	0.41	5.65	14133	5795	0.41	6.06
26	16	12696	10792	0.85	4.89	12129	10310	0.85	5.22	11530	9801	0.85	5.55
26	18	13549	9891	0.73	5.01	12963	9463	0.73	5.35	12351	9016	0.73	5.70
26	20	14451	8815	0.61	5.13	13847	8446	0.61	5.50	13219	8063	0.61	5.87
26	22	15401	7546	0.49	5.25	14779	7242	0.49	5.65	14133	6925	0.49	6.06
27	16	12696	11300	0.89	4.89	12129	10795	0.89	5.22	11530	10262	0.89	5.55
27	18	13549	10433	0.77	5.01	12963	9982	0.77	5.35	12351	9510	0.77	5.70
27	20	14451	9393	0.65	5.13	13847	9000	0.65	5.50	13219	8592	0.65	5.87
27	22	15401	8162	0.53	5.25	14779	7833	0.53	5.65	14133	7491	0.53	6.06
28	16	12696	11808	0.93	4.89	12129	11280	0.93	5.22	11530	10723	0.93	5.55
28	18	13549	10975	0.81	5.01	12963	10500	0.81	5.35	12351	10004	0.81	5.70
28	20	14451	9971	0.69	5.13	13847	9554	0.69	5.50	13219	9121	0.69	5.87
28	22	15401	8778	0.57	5.25	14779	8424	0.57	5.65	14133	8056	0.57	6.06
30	16	12696	12696	1.00	4.89	12129	12129	1.00	5.22	11530	11530	1.00	5.55
30	18	13549	12059	0.89	5.01	12963	11537	0.89	5.35	12351	10992	0.89	5.70
30	20	14451	11127	0.77	5.13	13847	10662	0.77	5.50	13219	10178	0.77	5.87
30	22	15401	10010	0.65	5.25	14779	9606	0.65	5.65	14133	9187	0.65	6.06
32	16	12696	12696	1.00	4.89	12129	12129	1.00	5.22	11530	11530	1.00	5.55
32	18	13549	13143	0.97	5.01	12963	12574	0.97	5.35	12351	11981	0.97	5.70
32	20	14451	12283	0.85	5.13	13847	11770	0.85	5.50	13219	11236	0.85	5.87
32	22	15401	11242	0.73	5.25	14779	10789	0.73	5.65	14133	10317	0.73	6.06

CA : Capacity (W)　　SHC : Sensible heat capacity (W)
P.C. : Power consumption (kW)　　SHF : Sensible heat factor

2) HEATING CAPACITY

Service Ref.	Indoor intake air D.B.(°C)	Outdoor intake air W.B.(°C)											
		-10		-5		0		5		10		15	
		CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.
PLH-3AAK(H)	15	5752	2.12	6593	2.34	7514	2.58	8516	2.83	9595	3.10	10752	3.38
	20	5508	2.29	6334	2.53	7231	2.78	8198	3.05	9235	3.34	10340	3.64
	25	5293	2.43	6077	2.69	6944	2.97	7895	3.27	8928	3.58	10044	3.90
PLH-4AAK(H)	15	7122	2.35	8163	2.60	9303	2.86	10543	3.14	11880	3.44	13312	3.75
	20	6820	2.54	7842	2.80	8953	3.09	10150	3.39	11434	3.70	12802	4.04
	25	6554	2.69	7524	2.99	8597	3.30	9774	3.63	11054	3.97	12435	4.33
PLH-5AAK(H)	15	9587	2.35	10988	2.60	9303	2.86	10543	3.14	11880	3.44	13312	3.75
	20	9180	2.54	10557	2.80	8953	3.09	10150	3.39	11434	3.70	12802	4.04
	25	8822	2.69	10128	2.99	8597	3.30	9774	3.63	11054	3.97	12435	4.33
PLH-6AAK(H)	15	11026	3.36	12636	3.71	14402	4.09	16322	4.48	18391	4.90	20608	5.35
	20	10557	3.62	12140	4.00	13859	4.40	15713	4.83	17700	5.28	19818	5.76
	25	10146	3.84	11647	4.26	13309	4.71	15131	5.17	17112	5.66	19250	6.18

Note C A :Capacity (W)
P.C.:Power consumption (kW)

Cooling capacity correction factors

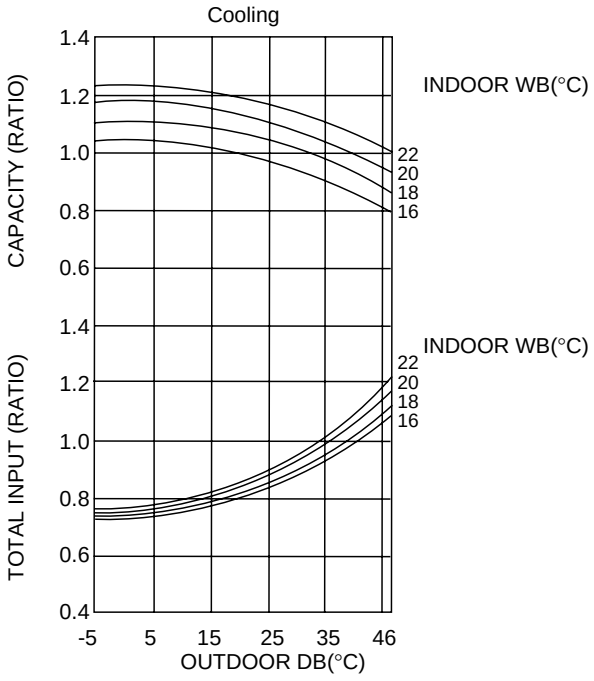
Service Ref.	Refrigerant piping length(one way)									
	5m	10m	15m	20m	25m	30m	35m	40m	45m	50m
PLH-3AAK(H)	1.00	0.981	0.968	0.952	0.940	0.925	0.913	0.900	0.886	0.874
PLH-4AAK(H)	1.00	0.989	0.980	0.970	0.960	0.950	0.940	0.930	0.920	0.910
PLH-5AAK(H)	1.00	0.981	0.968	0.952	0.940	0.925	0.913	0.900	0.886	0.874
PLH-6AAK(H)	1.00	0.975	0.955	0.935	0.918	0.900	0.884	0.869	0.855	0.840

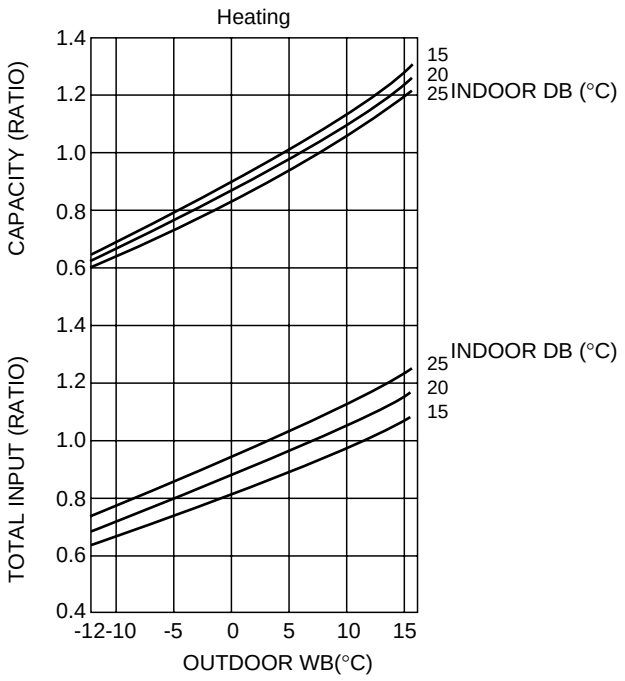
Heating capacity correction factors

Service Ref.	Refrigerant piping length(one way)									
	5m	10m	15m	20m	25m	30m	35m	40m	45m	50m
PLH-3AAK(H)	1.00	1.00	1.00	1.00	1.00	1.00	0.998	0.995	0.993	0.990
PLH-4AAK(H)	1.00	1.00	1.00	1.00	1.00	1.00	0.998	0.995	0.993	0.990
PLH-5AAK(H)	1.00	1.00	1.00	1.00	1.00	1.00	0.998	0.995	0.993	0.990
PLH-6AAK(H)	1.00	1.00	1.00	1.00	1.00	1.00	0.998	0.995	0.993	0.990

2. PERFORMANCE CURVE

PLH-3AAK(H) / PLH-4AAK(H) / PLH-5AAK(H) / PLH-6AAK(H)





3. PERFORMANCE DATA [60Hz]

1) COOLING CAPACITY(1)

PLH-3AAK / PLH-4AAK / PLH-5AAK / PLH-6AAK

Service Ref.	Indoor intake air W.B.(°C)	Outdoor intake air D.B.(°C)											
		20		25		30		35		40		45	
		CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.
PLH-3AAK	16	8071	2.95	7850	3.08	7561	3.31	7255	3.55	6931	3.79	6589	4.03
	18	8593	3.01	8367	3.14	8062	3.39	7742	3.64	7408	3.89	7058	4.14
	20	9121	3.07	8907	3.20	8589	3.46	8258	3.72	7912	3.99	7554	4.26
	22	9655	3.12	9470	3.26	9142	3.53	8800	3.81	8445	4.10	8076	4.40
PLH-4AAK	16	11047	3.52	10744	3.67	10350	3.95	9930	4.23	9486	4.52	9018	4.81
	18	11762	3.59	11452	3.74	11035	4.04	10597	4.34	10139	4.64	9660	4.93
	20	12485	3.66	12191	3.82	11756	4.13	11303	4.44	10830	4.76	10339	5.08
	22	13215	3.73	12962	3.89	12513	4.22	12045	4.55	11559	4.89	11054	5.25
PLH-5AAK	16	13115	4.47	12756	4.66	12287	5.02	11789	5.38	11263	5.74	10707	6.11
	18	13964	4.56	13596	4.76	13101	5.14	12581	5.51	12037	5.89	11469	6.27
	20	14822	6.65	14474	4.85	13957	5.25	13419	5.65	12858	6.05	12275	6.46
	22	15690	4.74	15389	4.95	14856	5.36	14301	5.78	13723	6.22	13124	6.67
PLH-6AAK	16	15334	4.93	14915	5.14	14367	5.53	13785	5.93	13168	6.33	12518	6.73
	18	16327	5.03	15897	5.24	15318	5.66	14711	6.08	14074	6.49	13410	6.91
	20	17330	5.12	16923	5.35	16319	5.78	15689	6.22	15034	6.67	14352	7.12
	22	18345	5.22	17993	5.45	17370	5.91	16721	6.37	16046	6.86	15345	7.35

Note C A :Capacity (W)
P.C.:Power consumption (kW)

Cooling capacity correction factors

Service Ref.	Refrigerant piping length(one way)									
	5m	10m	15m	20m	25m	30m	35m	40m	45m	50m
PLH-3AAK	1.00	0.981	0.968	0.952	0.940	0.925	0.913	0.900	0.886	0.874
PLH-4AAK	1.00	0.989	0.980	0.970	0.960	0.950	0.940	0.930	0.920	0.910
PLH-5AAK	1.00	0.981	0.968	0.952	0.940	0.925	0.913	0.900	0.886	0.874
PLH-6AAK	1.00	0.975	0.955	0.935	0.918	0.900	0.884	0.869	0.855	0.840

2) HEATING CAPACITY

Service Ref.	Indoor intake air D.B.(°C)	Outdoor intake air W.B.(°C)											
		-10		-5		0		5		10		15	
		CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.
PLH-3AAK	15	6369	2.38	7299	2.63	8319	2.90	9428	3.18	10623	3.48	11904	3.79
	20	6098	2.57	7013	2.84	8006	3.12	9077	3.43	10224	3.75	11448	4.08
	25	5861	2.72	6728	3.02	7688	3.34	8741	3.67	9885	4.02	11120	4.38
PLH-4AAK	15	8286	2.87	9497	3.17	10824	3.50	12267	3.84	13822	4.20	15488	4.58
	20	7934	3.09	9124	3.42	10416	3.77	11809	4.13	13302	4.52	14894	4.93
	25	7625	3.29	8753	3.65	10003	4.03	11372	4.43	12861	4.85	14468	5.28
PLH-5AAK	15	11299	4.11	12950	4.54	14760	5.00	16727	5.49	18848	6.00	21120	6.54
	20	10820	4.43	12442	4.89	14204	5.39	16104	5.91	18140	6.46	20310	7.04
	25	10398	4.70	11936	5.21	13640	5.76	15507	6.33	17537	6.93	19728	7.56
PLH-6AAK	15	11984	4.57	13735	5.05	15655	5.56	17741	6.11	19990	6.68	22401	7.28
	20	11475	4.93	13196	5.44	15065	6.00	17080	6.58	19239	7.19	21541	7.84
	25	11028	5.23	12660	5.80	14467	6.41	16447	7.05	18600	7.71	20924	8.41

Note C A :Capacity (W)
P.C.:Power consumption (kW)

Heating capacity correction factors

Service Ref.	Refrigerant piping length(one way)									
	5m	10m	15m	20m	25m	30m	35m	40m	45m	50m
PLH-3AAK	1.00	1.00	1.00	1.00	1.00	1.00	0.998	0.995	0.993	0.990
PLH-4AAK	1.00	1.00	1.00	1.00	1.00	1.00	0.998	0.995	0.993	0.990
PLH-5AAK	1.00	1.00	1.00	1.00	1.00	1.00	0.998	0.995	0.993	0.990
PLH-6AAK	1.00	1.00	1.00	1.00	1.00	1.00	0.998	0.995	0.993	0.990

4. ELECTRICAL DATA

Indoor unit ··· 220V 50Hz 1phase
Outdoor unit···220V 50Hz 1phase / 380V 50Hz 3phase

Refer to 3SPECIFICATIONS regarding the combination of PUH-3NKA or PUH-4/5/6TKSA.

Service Ref.		PLH-3AAK(H)		PLH-4AAK(H)		PLH-5AAK(H)		PLH-6AAK(H)	
Mode		Cool	Heat	Cool	Heat	Cool	Heat	Cool	Heat
Capacity (W)		7,500	8,200 [9,950]	9,500	10,200 [12,400]	12,200	13,600 [16,120]	13,800	15,700 [18,220]
Total Input (kW)		3.28	3.07 [4.83]	3.41	3.40 [5.58]	4.47	4.41 [6.93]	4.96	4.88 [7.40]
Indoor	Input (kW)	0.15	0.15 [1.91]	0.24	0.24 [2.42]	0.28	0.28 [2.80]	0.32	0.32 [2.84]
	Current (A)	0.78	0.78 [8.69]	1.25	1.25 [11.02]	1.43	1.43 [12.74]	1.64	1.64 [12.93]
	Starting current (A)	1.0	1.0 [8.9]	2.0	2.0 [11.8]	2.0	2.0 [13.3]	2.0	2.0 [13.3]
Outdoor	Input (kW)	3.13	2.92	3.17	3.16	4.19	4.13	4.64	4.56
	Current (A)	14.67/5.23	13.68/4.88	5.29	5.28	7.32	7.21	8.10	7.96
	Starting current (A)	54/34	54/34	37	37	60	60	68	68

Indoor unit ··· 230V 50Hz 1phase
Outdoor unit···230V 50Hz 1phase / 400V 50Hz 3phase

Service Ref.		PLH-3AAK(H)		PLH-4AAK(H)		PLH-5AAK(H)		PLH-6AAK(H)	
Mode		Cool	Heat	Cool	Heat	Cool	Heat	Cool	Heat
Capacity (W)		7,600	8,300 [10,200]	9,600	10,300 [12,700]	12,300	13,800 [16,560]	13,900	15,900 [18,660]
Total Input (kW)		3.30	3.09 [5.02]	3.44	3.43 [5.82]	4.49	4.44 [7.20]	5.02	4.90 [7.66]
Indoor	Input (kW)	0.16	0.16 [2.09]	0.25	0.25 [2.64]	0.29	0.29 [3.05]	0.33	0.33 [3.09]
	Current (A)	0.79	0.79 [9.09]	1.25	1.25 [11.49]	1.43	1.43 [13.28]	1.64	1.64 [13.46]
	Starting current (A)	1.0	1.0 [9.3]	2.0	2.0 [12.2]	2.0	2.0 [13.9]	2.0	2.0 [13.8]
Outdoor	Input (kW)	3.14	2.93	3.19	3.18	4.20	4.15	4.69	4.57
	Current (A)	14.22/5.21	13.27/4.86	5.23	5.22	7.05	6.97	7.87	7.67
	Starting current (A)	56/36	56/36	39	39	63	63	71	71

Indoor unit ···240V 50Hz 1phase
Outdoor unit···240V 50Hz 1phase / 415V 50Hz 3phase

Service Ref.		PLH-3AAK(H)		PLH-4AAK(H)		PLH-5AAK(H)		PLH-6AAK(H)	
Mode		Cool	Heat	Cool	Heat	Cool	Heat	Cool	Heat
Capacity (W)		7,700	8,400 [10,500]	9,700	10,400 [13,000]	12,400	14,000 [17,000]	14,000	16,100 [19,100]
Total Input (kW)		3.32	3.11 [5.21]	3.46	3.45 [6.05]	4.51	4.46 [7.46]	5.07	4.92 [7.92]
Indoor	Input (kW)	0.17	0.17 [2.27]	0.26	0.26 [2.86]	0.30	0.30 [3.30]	0.34	0.34 [3.34]
	Current (A)	0.81	0.81 [9.47]	1.25	1.25 [11.93]	1.43	1.43 [13.77]	1.64	1.64 [13.94]
	Starting current (A)	1.0	1.0 [9.7]	2.0	2.0 [12.7]	2.0	2.0 [14.3]	2.0	2.0 [14.3]
Outdoor	Input (kW)	3.15	2.94	3.20	3.19	4.21	4.16	4.73	4.58
	Current (A)	13.82/5.16	12.89/4.81	5.24	5.22	6.89	6.81	7.74	7.50
	Starting current (A)	58/37	58/37	40	40	65	65	74	74

5. STANDARD OPERATION DATA

Service Ref.				PLH-3AAK(H)		PLH-4AAK(H)		PLH-5AAK(H)		PLH-6AAK(H)	
Mode				Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating
Total	Capacity		W	7,700	8,400	9,700	10,400	12,400	14,000	14,000	16,100
	Input		kW	3.32	3.11	3.46	3.45	4.51	4.46	5.07	4.92
	Indoor unit Service Ref.			**PLH-3AAK(H)**		**PLH-4AAK(H)**		**PLH-5AAK(H)**		**PLH-6AAK(H)**	
Electrical circuit	Phase, Hz			1, 50		1, 50		1,50		1,50	
	Volts		V	240		240		240		240	
	Amperes		A	0.81	0.81	1.25	1.25	1.43	1.43	1.64	1.64
	Outdoor unit Service Ref.			**PUH-3VKA.TH PUH-3YKA.TH**		**PUH-4YKSA.TH**		**PUH-5YKSA.TH**		**PUH-6YKSA.TH**	
	Phase,Hz			1/3,50		3,50		3,50		3,50	
	Volts		V	240/415		415		415		415	
	Amperes		A	13.82/5.16	12.89/4.81	5.24	5.22	6.89	6.81	7.74	7.50
Refrigerant circuit	Discharge pressure		MPa (kgf/㎠)	2.01 (20.5)	1.89 (19.3)	1.81 (18.5)	1.73 (17.6)	1.85 (18.9)	1.94 (19.8)	1.90 (19.4)	2.01 (20.5)
	Suction pressure		MPa (kgf/㎠)	0.51 (5.2)	0.42 (4.3)	0.49 (5.0)	0.36 (3.7)	0.44 (4.5)	0.36 (3.7)	0.42 (4.3)	0.37 (3.8)
	Discharge temperature		°C	84	77	80	75	76	81	74	76
	Condensing temperature		°C	41	—	41	—	46	—	39	—
	Suction temperature		°C	3.9	-2.0	10.5	1.0	4.0	1.1	4.6	0.3
	Ref. pipe length		m	5	5	5	5	5	5	5	5
Indoor side	Intake air temperature	D.B.	°C	27	20	27	20	27	20	27	20
		W.B.	°C	19	15	19	15	19	15	19	15
	Discharge air temperature	D.B.	°C	13.2	42.8	13.7	39.9	12.5	45.5	11.2	49.8
Outdoor side	Intake air temperature	D.B.	°C	35	7	35	7	35	7	35	7
		W.B.	°C	24	6	24	6	24	6	24	6
SHF				0.74	—	0.79	—	0.73	—	0.71	—
BF				0.12	—	0.08	—	0.10	—	0.06	—

The unit of pressure has been changed to Mpa based on the international SI system.
The conversion factor is : 1(Mpa)=10.2(kgf/㎠)

6. OUTLET AIR SPEED AND COVERAGE RANGE

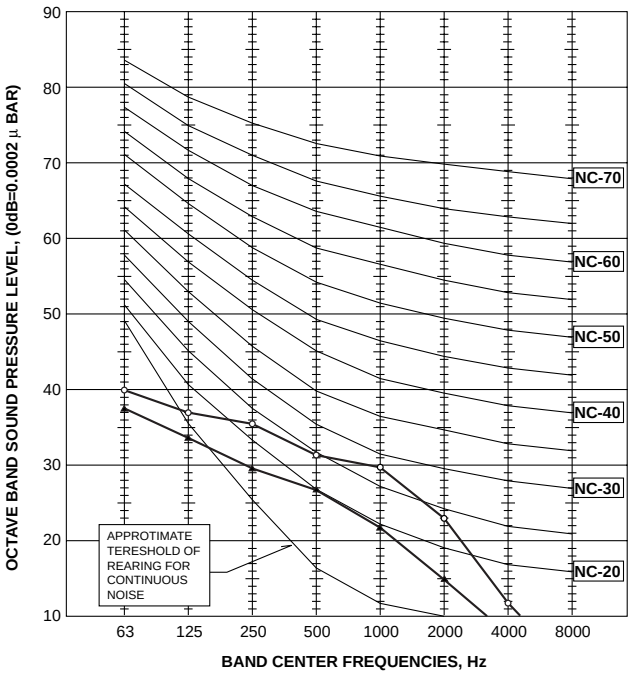
			PLH-3AAK(H)	PLH-4AAK(H)	PLH-5AAK(H)	PLH-6AAK(H)
Standard	Air flow	㎥/mim(CFM)	20(705)	28(990)	30(1,060)	30(1,060)
	Air speed	m/sec	4.0	4.9	5.2	6.6
	Coverage range	m	5.7	7.4	7.9	8.9

※The air coverage range is the value up to the position where the air speed is 0.25m/sec.
When air is blown out horizontally from the unit at the Hi notch position.
The coverage range should be used only as a general guideline since it varies according to the size of the room and the furniture inside the room.

7. NOISE CRITERION CURVES

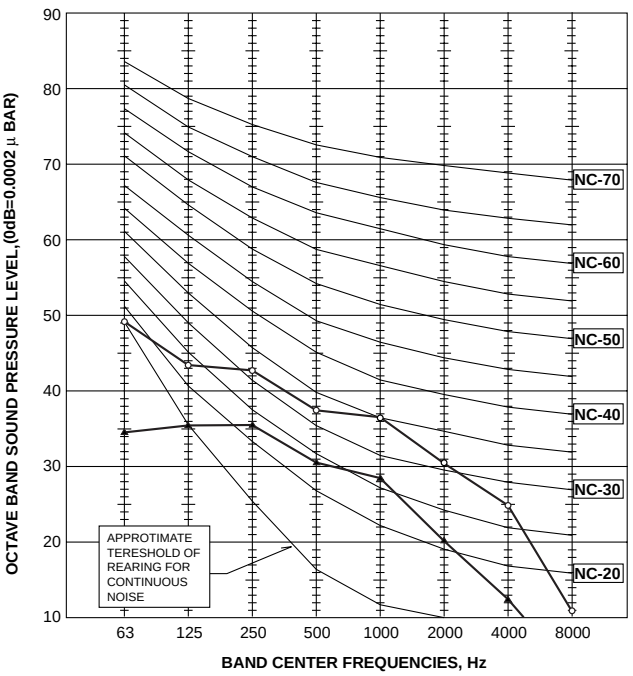
PLH-3AAK(H)

NOTCH	SPL(dB)	LINE
High	34	○——○
Low	28	▲——▲



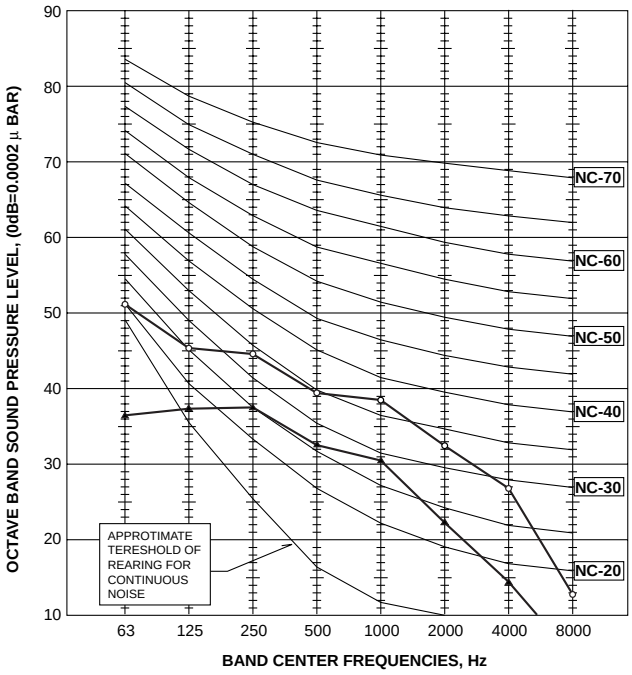
PLH-4AAK(H)

NOTCH	SPL(dB)	LINE
High	41	○——○
Low	33	▲——▲



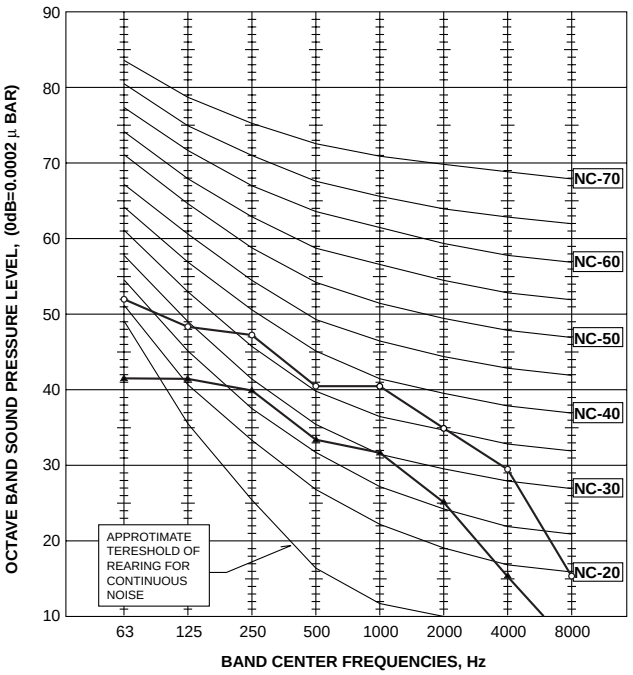
PLH-5AAK(H)

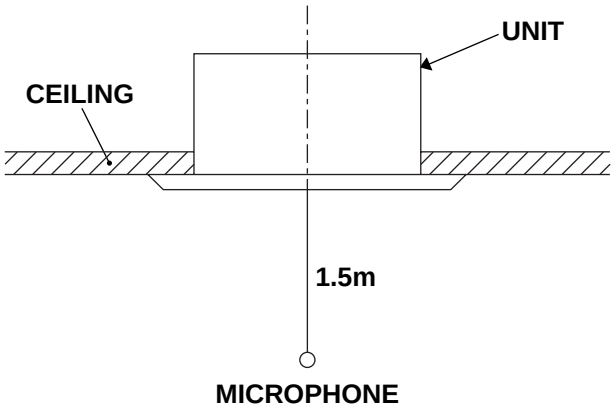
NOTCH	SPL(dB)	LINE
High	43	○——○
Low	35	▲——▲



PLH-6AAK(H)

NOTCH	SPL(dB)	LINE
High	45	○——○
Low	37	▲——▲





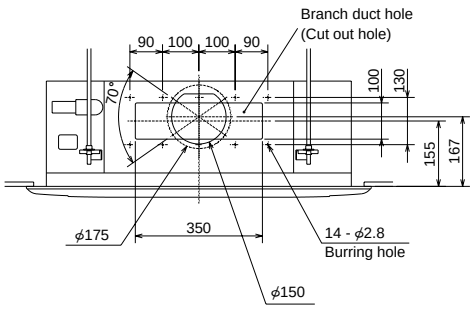
Ambient temperature 27℃

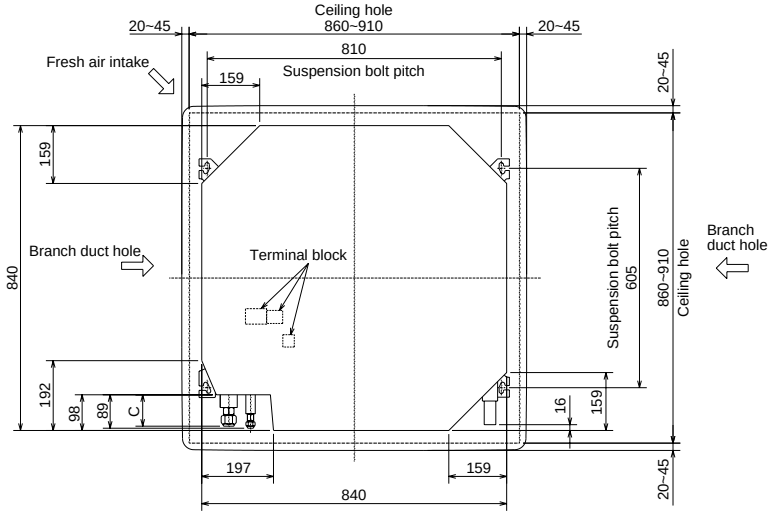
Test conditions are based on JIS Z8731

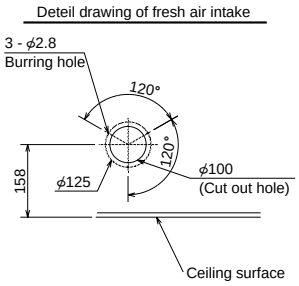
5 OUTLINES AND DIMENSIONS

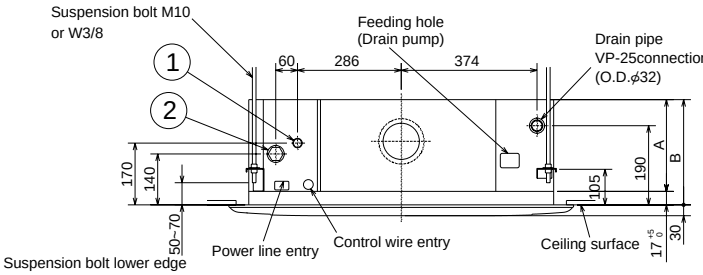
1. INDOOR UNIT PLH-3AAK(H)
PLH-4AAK(H)
PLH-5AAK(H)
PLH-6AAK(H)

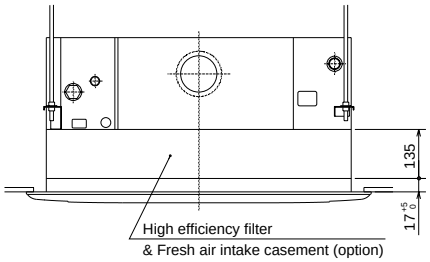
Unit : mm

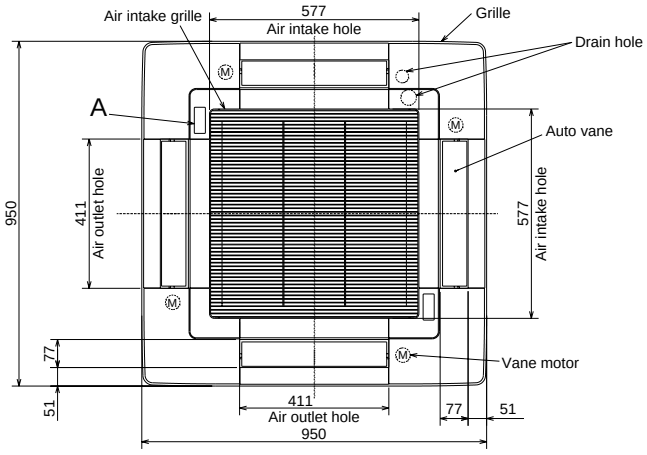


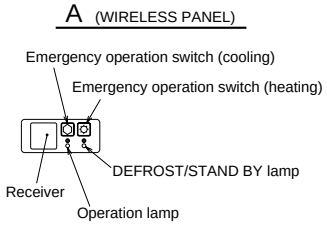








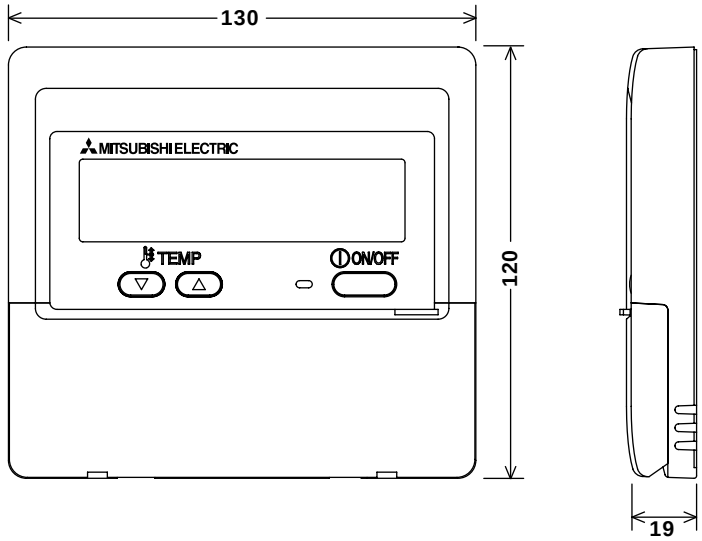


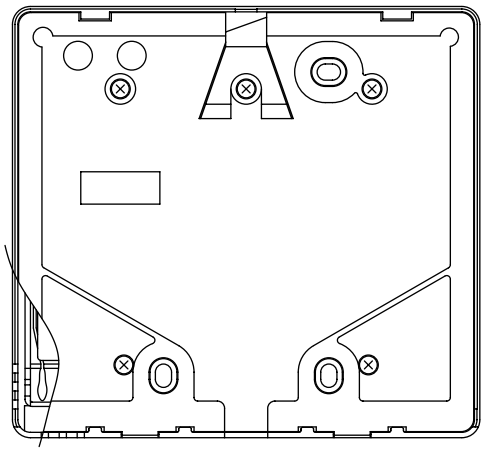


Models	①	②	A	B	C
PLH-3AAK(H)	Refrigerant pipe (9.52mm dia.) flared connection 3/8F	Refrigerant pipe (15.88mm dia.) flared connection 5/8F	241	258	80
PLH-4,5,6AAK(H)	Refrigerant pipe (9.52mm dia.) flared connection 3/8F	Refrigerant pipe (19.05mm dia.) flared connection 3/4F	281	298	84

WIRED REMOTE CONTROLLER

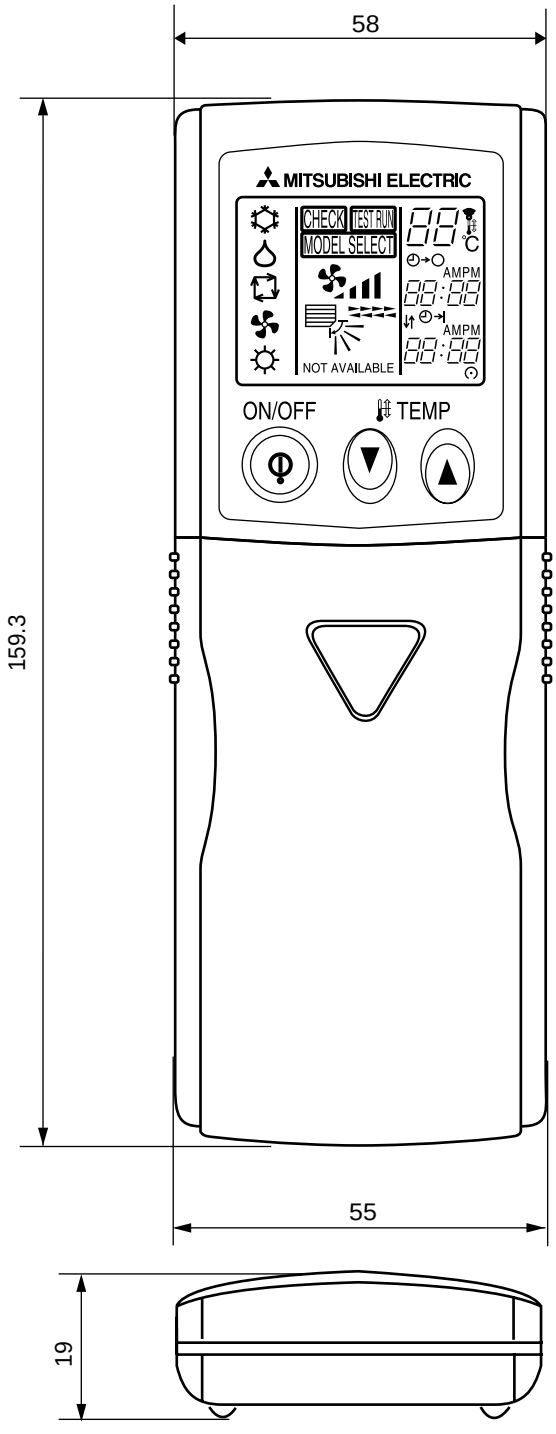
Unit : mm





WIRELESS REMOTE CONTROLLER

Unit : mm



6 WIRING DIAGRAM

PLH-3AAK PLH-4AAK PLH-5AAK PLH-6AAK
PLH-3AAKH PLH-4AAKH PLH-5AAKH PLH-6AAKH

[LEGEND]

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
P.B	INDOOR POWER BOARD	C	CAPACITOR(FAN MOTOR)	W.B	WIRELESS REMOTE CONTROLLER BOARD
I.B	INDOOR CONTROLLER BOARD	MF	FAN MOTOR	RU	RECEIVING UNIT
FUSE	FUSE(T6.3AL250V)	MV	VANE MOTOR	BZ	BUZZER
ZNR	VARISTOR	H2	DEW PREVENTION HEATER	LED1	LED(RUN INDICATOR)
BCR	FAN CONTROL ELEMENT	DP	DRAIN-UP MACHINE	LED2	LED(HOT ADJUST)
CN2L	CONNECTOR(LOSSNAY)	DS	DRAIN SENSOR	SW1	SWITCH(HEATING ON/OFF)
CN32	CONNECTOR(REMOTE SWITCH)	TB2	TERMINAL BLOCK (POWER SUPPLY)	SW2	SWITCH(COOLING ON/OFF)
CN41	CONNECTOR(HA TERMINAL-A)	TB4	TERMINAL BLOCK (INDOOR/ OUTDOOR CONNECTING LINE)	HEATER	
CN51	CONNECTOR(CENTRALLY CONTROL)			FS1	THERMAL FUSE(72℃, 16A)
LED1	POWER SUPPLY(I.B)	TB5, TB6	TERMINAL BLOCK(REMOTE CONTROLLER TRANSMISSION LINE)	FS2	THERMAL FUSE(104℃, 16A)
LED2	POWER SUPPLY(R.B)			H1	HEATER
X1	RELAY(DRAIN PUMP)	TH1	ROOM TEMP.THERMISTOR (0℃/15kΩ,25℃/5.4kΩ DETECT)	26H	HEATER THERMAL SWITCH
X4	RELAY(FAN MOTOR)			88H	HEATER CONTACTOR
SW1	SWITCH(MODEL SELECTION)※See table 1	TH2	PIPE TEMP.THERMISTOR/LIQUID (0℃/15kΩ,25℃/5.4kΩ DETECT)		
SW2	SWITCH(CAPACITY CORD)※See table 2				
SW5	SWITCH(SYSTEM SELECTION)※See table 3	R.B	WIRED REMOTE CONTROLLER BOARD		
SW6	SWITCH(EMERGENCY OPERATION)				
SWE	CONNECTOR(EMERGENCY OPERATION)				

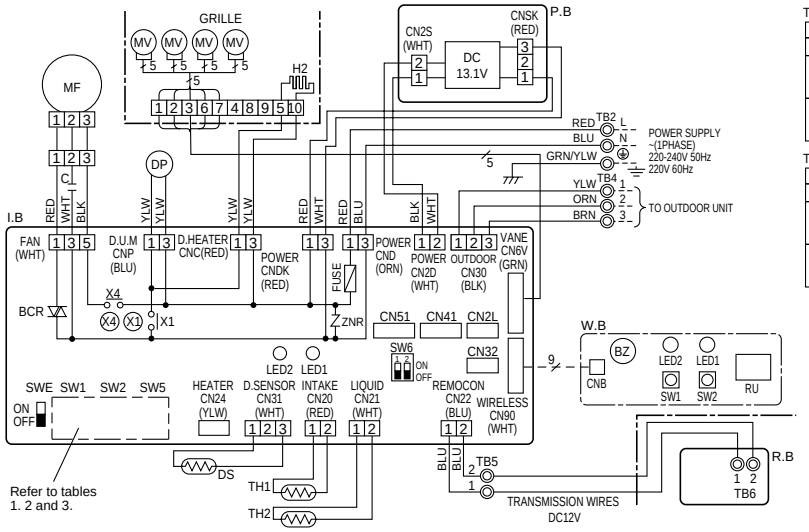


Table 1

SW1	
MODELS	Manufacture/Service
PLH-AAK	1 2 3 4 5 ON OFF
PLH-AAKH	1 2 3 4 5 ON OFF

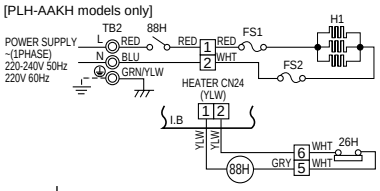
Table 3

SW5	
MODELS	Manufacture/Service
PLH-AAK	1 2 3 4 5 6 7 8 ON OFF
PLH-AAKH	1 2 3 4 5 6 7 8 ON OFF

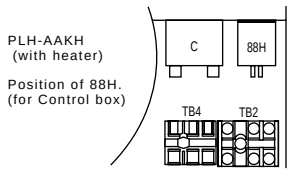
Table 2

SW2			
MODELS	Manufacture/Service	MODELS	Manufacture/Service
PLH-3AAK PLH-3AAKH	1 2 3 4 5 ON OFF	PLH-5AAK PLH-5AAKH	1 2 3 4 5 ON OFF
PLH-4AAK PLH-4AAKH	1 2 3 4 5 ON OFF	PLH-6AAK PLH-6AAKH	1 2 3 4 5 ON OFF

[PLH-AAKH models only]



NOTES:
1.Symbols used in wiring diagram above are, ⊏⊐: Connector, ◎: Terminal (block).
2.Indoor and outdoor connecting wires are made with polarities, make wiring matching terminal numbers (1, 2, 3).
3.Since the outdoor side electric wiring may change be sure to check the outdoor unit electric wiring for servicing.



Please set the voltage using the remote controller.
For the setting method. please refer to the indoor unit Installation Manual.

[Self-diagnosis]
1.For details on how to operate self-diagnosis with the wireless remote control, refer to the technical manuals etc.
2.For the wired remote control:When you quickly press twice the CHECK switch on the remote control, the unit begins self-diagnosis.
and Check Codes generated in the past appear on the display.
For Check Codes and symptoms refer to the table below.

Check Code	Symptom
P1	Abnormality of room temperature thermistor (TH1).
P2	Abnormality of pipe temperature thermistor/Liquid (TH2).
P4	Abnormality of drain sensor (DS).
P5	Malfunction of drain-up machine.
P6	Freezing / overheating protection is working.
P8	Abnormality in outdoor unit. Refer to outdoor unit wiring diagram.
E0-E5	Abnormality of the signal transmission between remote controller and indoor unit.
Fb	Abnormality of indoor controller board.
----	No trouble generated in the past.
FFFF	No corresponding unit.

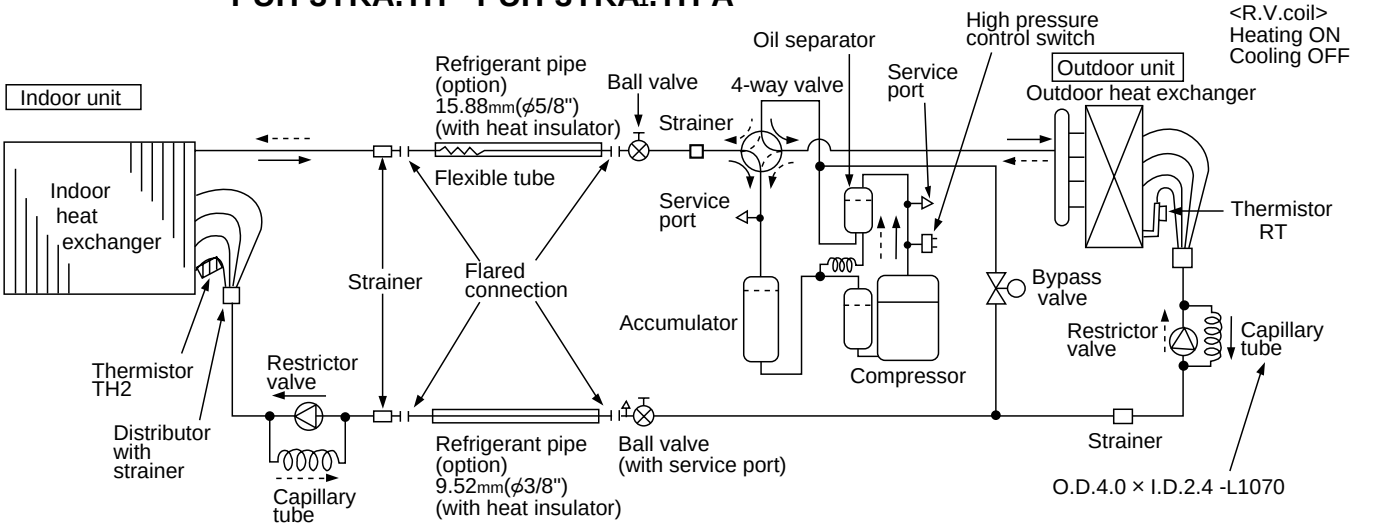
[Emergency operation procedure]
1.When the wired remote control or the indoor unit microcomputer has failed,but all other compornents work if you set the switch (SWE, SW6) on the indoor control board, the indoor unit will begin properly Emergency Operation.
※Note on the wireless remote control: when the remote control does not function, it is possible to activate Emergency Operation by using the indoor unit emergency operation switch (SW1,SW2 of the wireless signal receiver board).
However,if the indoor unit microcomputer has failed,it is nesessary to proceed with points 2 and 3 below as in the case of the wired remote controller.
2.When you activate emergency operation of the cooling or heating, you have to set the switch (SWE) and switch (SW6) on the indoor controller.
SWE : ON • Indoor fan is running at high speed. • Drain-up machine is working.
SW6-1 : ON • Emergency operation of cooling mode.
SW6-1,2 : ON • Emergency operation of heating mode.
3.Before you activate emergency operation, check the following points:
(1) Emergency operation cannot be activated when:
• the outdoor unit malfunctions. • the indoor fan malfunctions.
• when it has detected the malfunction of drain-up machine during self-diagnosing.
(2) Emergency operation becomes continuous only by switching the power source on/off. ON/OFF on the remote control or temperature control etc,dose not function.
(3) Avoid operating for a long time when the outdoor unit begins defrosting while emergency operation of the heating is activated, because it will start to blow cold air.
(4) Emergency cooling should be limited to 10 hours maximum (The indoor unit heat exchanger may freeze).
(5) After emergency operation has been deactivated, set the switches etc.to their original positions.
(6) Movement of the vanes does not work in emergency operation, therefore you have to slowly set them manually to the appropriate position.

7 REFRIGERANT SYSTEM DIAGRAM

Unit : mm

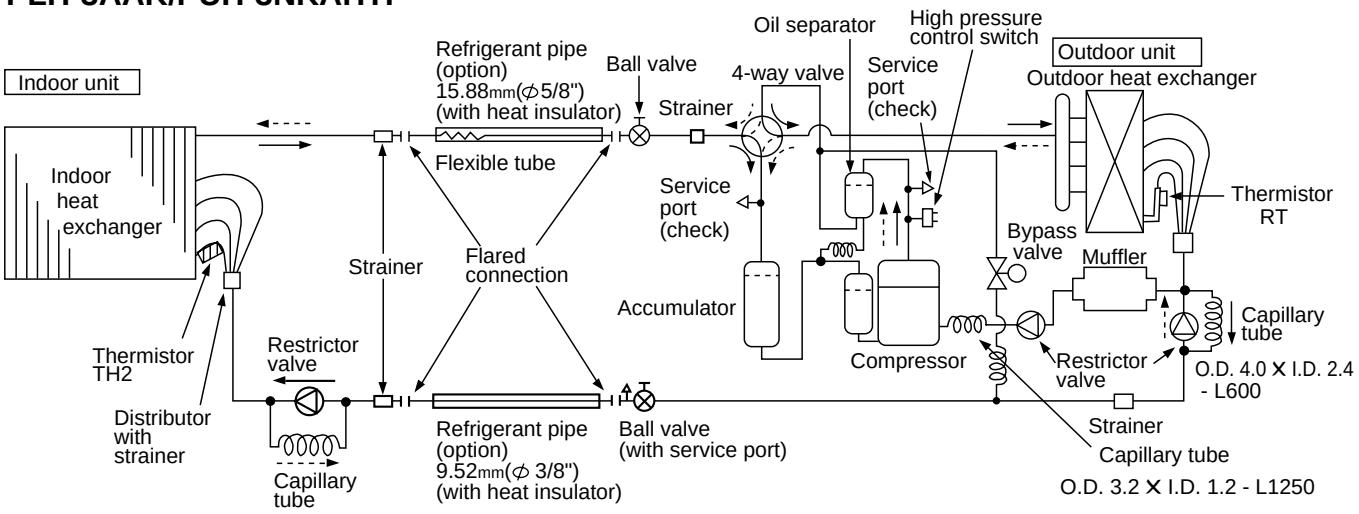
→ Refrigerant flow in cooling
⇢ Refrigerant flow in heating

PLH-3AAK(H)/ PUH-3VKA.TH · PUH-3VKA2.TH-A
PUH-3YKA.TH · PUH-3YKA1.TH-A



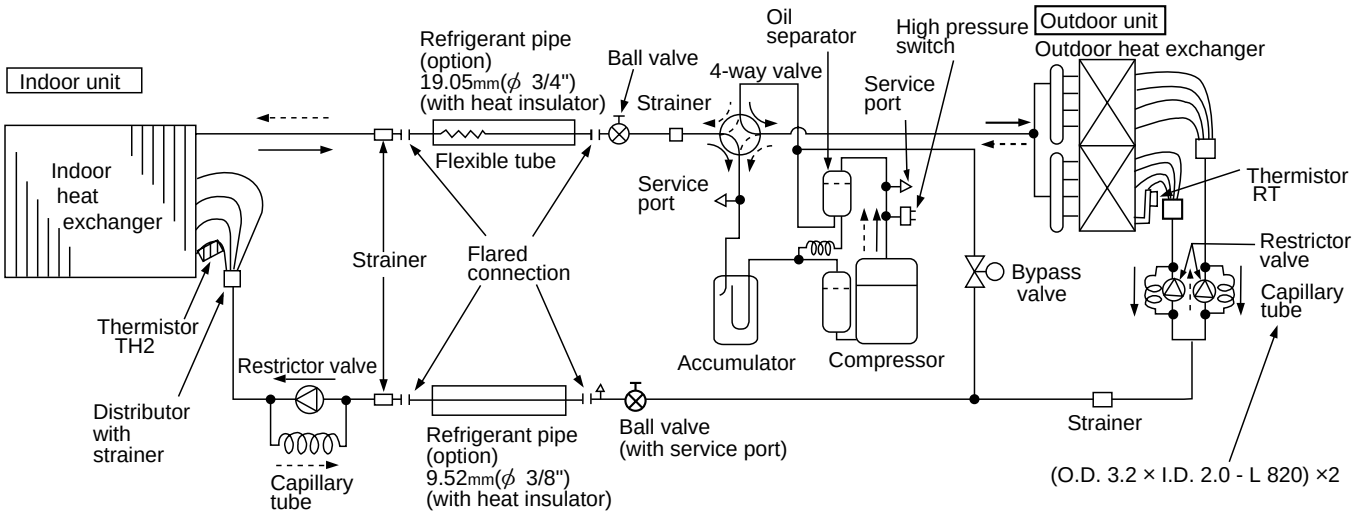
O.D.4.0 × I.D.2.0 - L200

PLH-3AAK/PUH-3NKA.TH



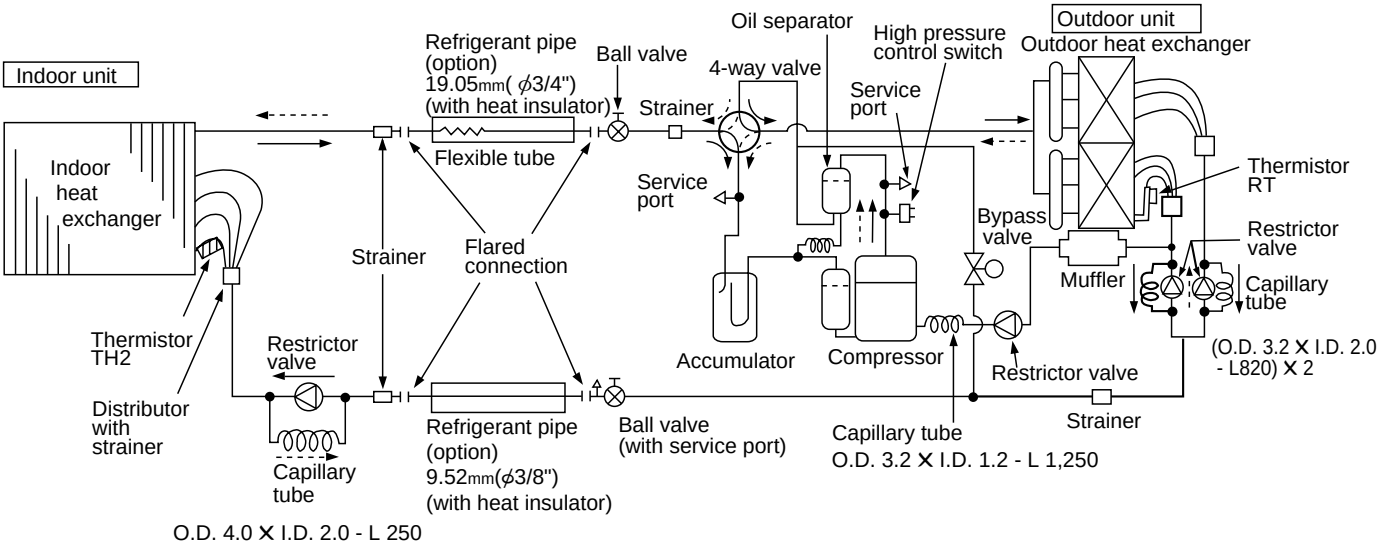
O.D.4.0 X I.D.2.0 - L200

PLH-4AAK(H)/PUH-4YKSA.TH · PUH-4YKSA1.TH-A

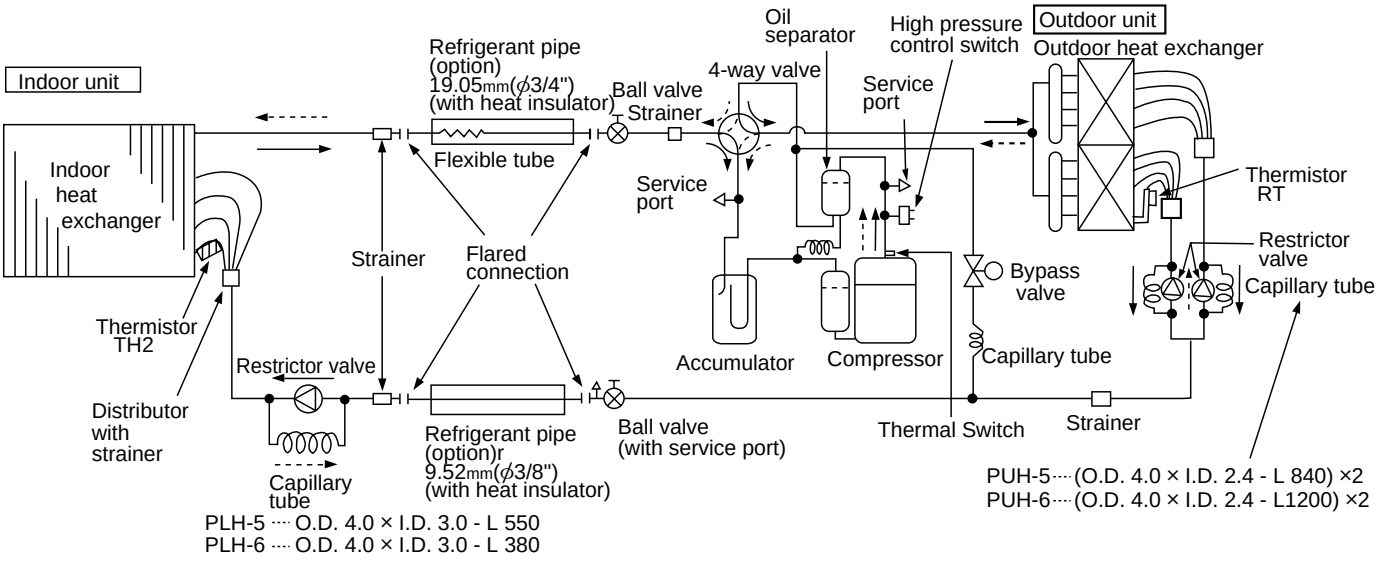


O.D. 4.0 × I.D. 2.0 - L 250

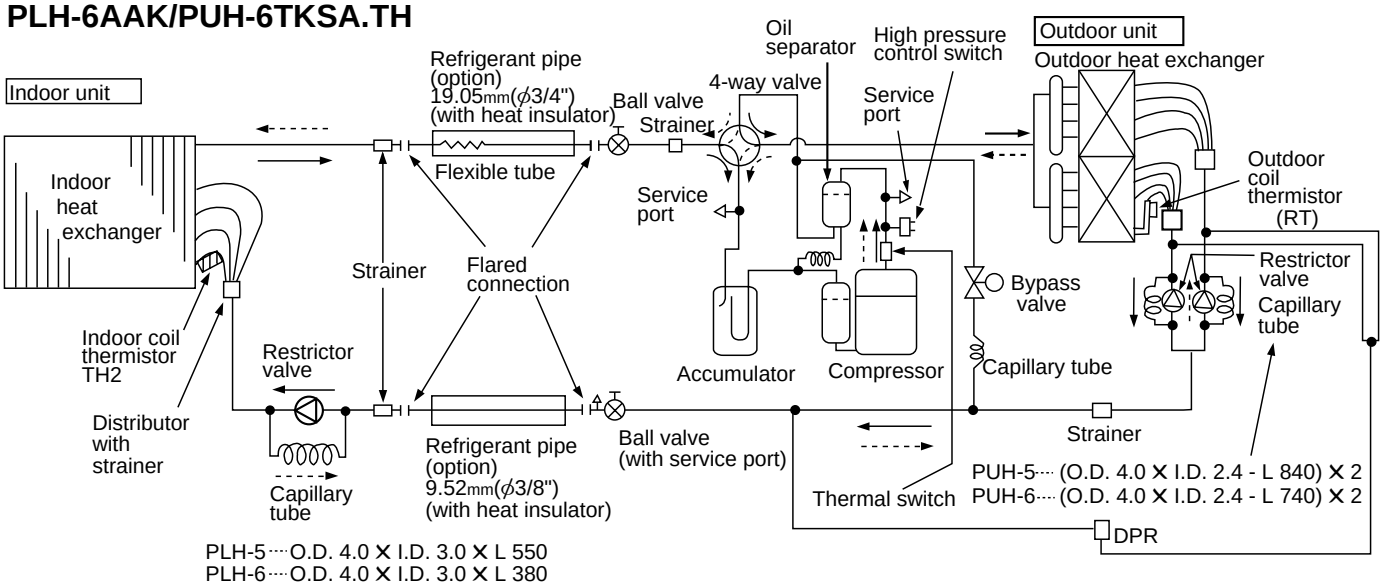
PLH-4AAK/PUH-4TKSA.TH



PLH-5AAK(H)/PUH-5YKSA.TH · PUH-5YKSA3.TH-A
PLH-6AAK(H)/PUH-6YKSA.TH · PUH-6YKSA3.TH-A



PLH-5AAK/PUH-5TKSA.TH
PLH-6AAK/PUH-6TKSA.TH



8 TROUBLESHOOTING

8-1. TROUBLESHOOTING

<Error code display by self-diagnosis and actions to be taken for service (summary)>

Present and past error codes are logged and displayed on the wired remote controller or controller board of outdoor unit. Actions to be taken for service,which depends on whether or not the the inferior phenomenon is reoccurring at service, are summarized in the table below. Check the contents below before investigating details.

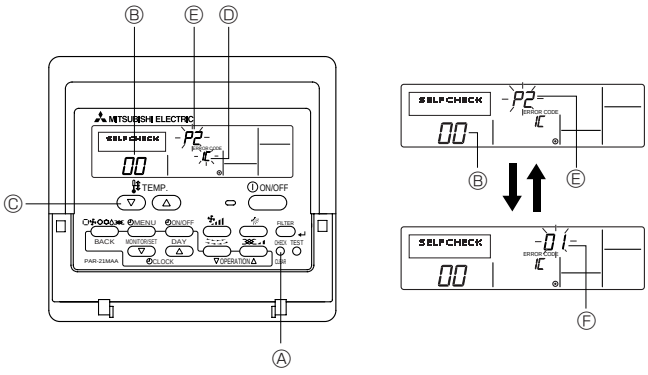
Unit conditions at service	Error code	Actions to be taken for service (summary)
The inferior phenomenon is reoccurring.	Displayed	Judge what is wrong and take a corrective action according to “SELF-DIAGNOSIS ACTION TABLE” (8-3).
	Not displayed	Identify the cause of the inferior phenomenon and take a corrective action according to “TROUBLESHOOTING BY INFERIOR PHENOMENA ” (8-4).
The inferior phenomenon is not reoccurring.	Logged	①Consider the temporary defects such as the work of protection devices in the refrigerant circuit including compressor, poor connection of wiring, noise and etc. Re-check the symptom, and check the installation environment, refrigerant amount, weather when the inferior phenomenon occurred, and wiring related. ②Reset error code logs and restart the unit after finishing service. ③There is no abnormality in electrical components, controller boards, and remote controller.
	Not logged	①Recheck the abnormal symptom. ②Identify the cause of the inferior phenomenon and take a corrective action according to “TROUBLESHOOTING BY INFERIOR PHENOMENA ” (8-4). ③Continue to operate unit for the time being if the cause is not ascertained. ④There is no abnormality in electrical components, controller boards, remote controller etc.

8-2. MALFUNCTION-DIAGNOSIS METHOD BY REMOTE CONTROLLER

<In case of trouble during operation>

When a malfunction occurs to air conditioner, both indoor unit and outdoor unit will stop and operation lamp blinks to inform unusual stop.

■ Wired remote controller

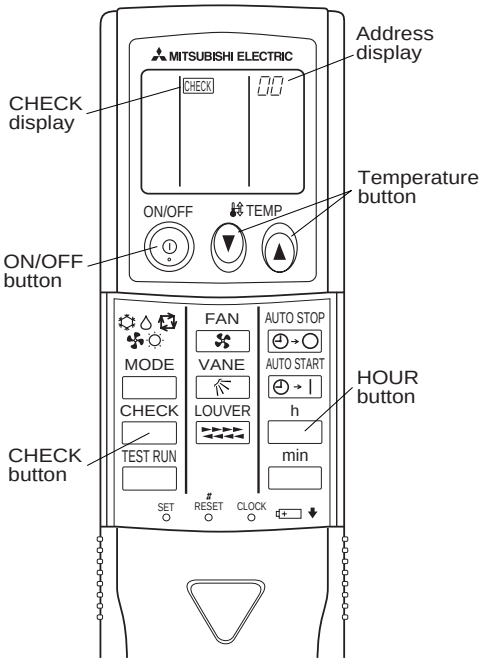


① Turn on the power.
② Press the [CHECK] button twice.
③ Set address with [TEMP] button if system control is used.
④ Press the [ON/OFF] button to stop the self-check.

Ⓐ CHECK button
Ⓑ Address
Ⓒ TEMP. button
Ⓓ IC : Indoor unit
OC: Outdoor unit
Ⓔ Check code
Ⓕ Unit No.

<Malfunction-diagnosis method at maintenance service>

■ Wireless remote controller

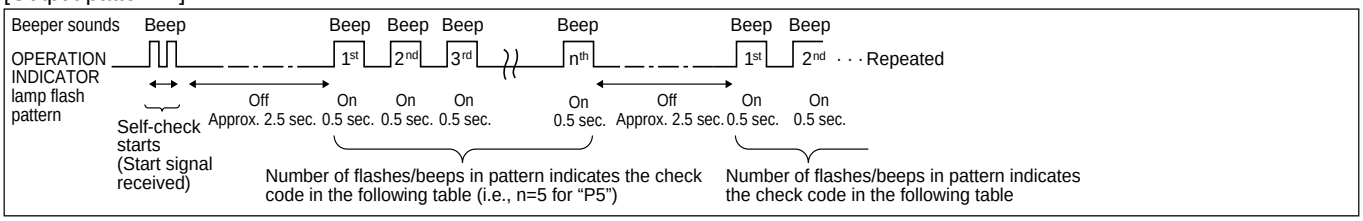


[Procedure]

1. Press the CHECK button twice.
   - "CHECK" lights, and address "00" flashes.
   - Check that the remote controller's display has stopped before continuing.
2. Press the temperature buttons.
   - Select the address of the indoor unit for the self-diagnosis.
     Main indoor unit : “00”
     Sub indoor unit : “01”
3. Point the remote controller at the sensor on the indoor unit and press the HOUR button.
   - If an air conditioner error occurs, the indoor unit's sensor emits an intermittent buzzer sound, the operation light flashes, and the error code is output.
     (It takes 3 seconds at most for error code to appear.)
4. Point the remote controller at the sensor on the indoor unit and press the ON/OFF button.
   - The check mode is cancelled.

• Refer to the following tables for details on the check codes.

[Output pattern A]


Beeper sounds
Beep
Beep Beep Beep
Beep
Beep Beep
OPERATION INDICATOR lamp flash pattern
1st 2nd 3rd nth 1st 2nd · · · Repeated
Off
Approx. 2.5 sec.
On 0.5 sec.
On 0.5 sec.
On 0.5 sec.
On 0.5 sec.
Off
Approx. 2.5 sec.
On 0.5 sec.
On 0.5 sec.
Self-check starts (Start signal received)
Number of flashes/beeps in pattern indicates the check code in the following table (i.e., n=5 for “P5”)
Number of flashes/beeps in pattern indicates the check code in the following table

[Output pattern A] Errors detected by indoor unit

Wireless remote controller	Wired remote controller	Symptom	Remark
Beeper sounds/OPERATION INDICATOR lamp flashes (Number of times)	① Check code		
1	P1	Intake sensor error	
2	P2	Pipe (TH2) sensor error	
4	P4	Drain sensor error	
5	P5	Drain pump error	
	PA	Forced compressor stop	
6	P6	Freezing/ Overheating safeguard operation	
8	P8	Pipe temperature error / Outdoor unit error	
9	E4, E5	Remote controller signal receiving error	
10	–	–	
11	–	–	
12	Fb	Indoor unit control system error (memory error, etc.)	
–	E0, E3	Remote controller transmission error	
–	E1, E2	Remote controller control board error	

*1 If the beeper does not sound again after the initial two beeps to confirm the self-check start signal was received and the OPERATION INDICATOR lamp does not come on, there are no error records.

*2 If the beeper sounds three times continuously “beep, beep, beep (0.4 + 0.4 + 0.4 sec.)” after the initial two beeps to confirm the self-check start signal was received, the specified refrigerant address is incorrect.

• On wireless remote controller

②The continuous buzzer sounds from receiving section of indoor unit.

③Blink of operation lamp

• On wired remote controller

①Check code displayed in the LCD.

• If the unit cannot be operated properly after the above test run has been performed, refer to the following table to remove the cause.

Symptom		Cause
Wired remote controller		
PLEASE WAIT	For about 2 minutes following power-on	• For about 2 minutes following power-on,operation of the remote controller is not possible due to system start-up. (Correct operation)
PLEASE WAIT → Error code	After about 2 minutes has expired following power-on	• Connector for the outdoor unit's protection device is not connected. • Reverse or open phase wiring for the outdoor unit's power terminal block
Display messages do not appear even when operation switch is turned ON (operation lamp does not light up).		• Incorrect wiring between indoor and outdoor units • Remote controller wire short

On the wireless remote controller with condition above, following phenomena takes place.
• No signals from the remote controller are accepted.
• Opration lamp is blinking.
• The buzzer makes a short piping sound.

Note:
Operation is not possible for about 30 seconds after cancellation of function selection. (Correct operation)

For description of each LED (LED1, 2) provided on the indoor controller, refer to the following table.

LED1 (power for microcomputer)	Indicates whether control power is supplied. Make sure that this LED is always lit.
LED2 (power for wired remote controller)	Indicates whether power is supplied to the wired remote controller. This LED lights only in the case of the main indoor unit.

8-3. SELF-DIAGNOSIS ACTION TABLE

Note: Refer to the manual of outdoor unit for the details of display such as F, U, and other E.

Error Code	Meaning of error code and detection method	Cause	Countermeasure
P1	**Abnormality of room temperature thermistor (TH1)** ① The unit is in three-minute resume prevention mode if short/open of thermistor is detected. Abnormal if the unit does not reset normally after three minutes. (The unit returns to normal operation, if it has normally reset.) ② Constantly detected during cooling, drying, and heating operation. Short: 90℃ or more Open: -40℃ or less	① Defective thermistor characteristics. ② Contact failure of connector (CN20) on the indoor controller board. (Insert failure) ③ Breaking of wire or contact failure of thermistor wiring. ④ Defective indoor controller board.	①–③ Check resistance value of thermistor. 0℃ ……15.0kΩ 10℃ ….9.6kΩ 20℃ ….6.3kΩ 30℃ ….4.3kΩ 40℃ ….3.0kΩ If you put force on (draw or bend) the lead wire with measuring resistance value of thermistor breaking of wire or contact failure can be detected. ② Check contact failure of connector (CN20) on the indoor controller board. Refer to 8-7. Turn the power on again and check restart after inserting connector again. ④ Check room temperature display on remote controller. Replace indoor controller board if there is abnormal difference with actual room temperature. Turn the power off, and on again to operate after check.
P2	**Abnormality of pipe temperature thermistor/Liquid (TH2)** ① The unit is in three-minute resume prevention mode if short/open of thermistor is detected. Abnormal if the unit does not reset normally after three minutes. (The unit returns to normal operation, if it has normally reset.) ② Constantly detected during cooling, drying, and heating (except defrosting) operation. Short: 90℃ or more Open: -40℃ or less	① Defective thermistor characteristics. ② Contact failure of connector (CN21) on the indoor controller board. (Insert failure) ③ Breaking of wire or contact failure of thermistor wiring. ④ Defective refrigerant circuit is causing thermistor temperature of 90℃ or more or -40℃ or less. ⑤ Defective indoor controller board.	①–③ Check resistance value of thermistor. For characteristics, refer to (P1) above. ② Check contact failure of connector (CN21) on the indoor controller board. Refer to 8-7. Turn the power on and check restart after inserting connector again. ④ Check pipe <liquid> temperature with remote controller in test run mode. If pipe <liquid> temperature is exclusively low (in cooling mode) or high (in heating mode), refrigerant circuit may have defective. ⑤ Check pipe <liquid> temperature with remote controller in test run mode. If there is exclusive difference with actual pipe <liquid> temperature, replace indoor controller board. Turn the power off, and on again to operate after check.
P4	**Abnormality of drain sensor (DS)** ① Suspensive abnormality, if short/open of thermistor is detected for 30 seconds continuously. Turn off compressor and indoor fan. ② Short/open is detected for 30 seconds continuously during suspensive abnormality. (The unit returns to normal operation, if it has normally reset.) ③ Detect the following condition. • During cooling and drying operation. • In case that pipe <liquid> temperature - room temperature <-10deg (Except defrosting) • When pipe <liquid> temperature or room temperature is short/open temperature. • During drain pump operation.	① Defective thermistor characteristics ② Contact failure of connector (CN31) on the indoor controller board. (Insert failure). ③ Breaking of wire or contact failure of drain sensor wiring. ④ Defective indoor controller board.	①–③ Check resistance value of thermistor. 0℃ ……6.0kΩ 10℃ ….3.9kΩ 20℃ ….2.6kΩ 30℃ ….1.8kΩ 40℃ ….1.3kΩ ② Check contact failure of connector (CN31) on the indoor controller board. Refer to 8-7. Turn the power on again and check restart after inserting connector again. ④ Replace indoor controller board if drain pump operates with the line of drain sensor connector CN31-① and ② is short-circuited, and abnormality reappears. Turn the power off, and on again to operate after check.
P5	**Malfunction of drain pump (DP)** ① Suspensive abnormality, if thermistor of drain sensor is let heat itself and temperature rises slightly. Turn off compressor and indoor fan. ② Drain pump is abnormal if the condition above is detected during suspensive abnormality. ③ Constantly detected during drain pump operation.	① Malfunction of drain pump ② Defective drain Clogged drain pump Clogged drain pipe ③ Attached drop of water at the drain sensor • Drops of drain trickles from lead wire. • Clogged filter is causing wave of drain. ④ Defective indoor controller board.	① Check if drain-up machine works. ② Check drain function. ③ Check the setting of lead wire of drain sensor and check clogs of the filter. ④ Replace indoor controller board if drain pump operates with the line of drain sensor connector CN31-① and ② is short-circuited and abnormality reappears. Refer to 8-7. Turn the power off, and on again to operate after check.

Error Code	Meaning of error code and detection method	Cause	Countermeasure
P6	**Freezing/overheating protection is working** ① Freezing protection (Cooling mode) The unit is in six-minute resume prevention mode if pipe temperature stays under -15℃ for three minutes, three minutes after the compressor started. Abnormal if it stays under -15℃ for three minutes again within 16 minutes after six-minute resume prevention mode. <Frost prevention mode> If pipe temperature is 2℃ or below when 16 minutes has passed after compressor starts operating, unit will start operating in frost prevention mode which stops compressor operation. After that, when pipe temperature stays 10℃ or more for 3 minutes, frost prevention mode will be released and compressor will restart its operation. ② Overheating protection (Heating mode) The units is in six-minute resume prevention mode if pipe temperature is detected as over 70℃ after the compressor started. Abnormal if the temperature of over 70℃ is detected again within 10 minutes after six-minute resume prevention mode.	(Cooling or drying mode) ① Clogged filter (reduced airflow) ② Short cycle of air path ③ Low-load (low temperature) operation beyond the tolerance range ④ Defective indoor fan motor • Fan motor is defective. • Indoor controller board is defective. ⑤ Defective outdoor fan control ⑥ Overcharge of refrigerant ⑦ Defective refrigerant circuit (clogs) (Heating mode) ① Clogged filter (reduced airflow) ② Short cycle of air path ③ Over-load (high temperature) operation beyond the tolerance range ④ Defective indoor fan motor • Fan motor is defective. • Indoor controller board is defective. ⑤ Defective outdoor fan control ⑥ Overcharge of refrigerant ⑦ Defective refrigerant circuit (clogs) ⑧ Bypass circuit of outdoor unit is defective.	(Cooling or drying mode) ① Check clogs of the filter. ② Remove shields. ④ Measure the resistance of fan motor's winding. Measure the output voltage of fan's connector (FAN) on the indoor controller board. ※The indoor controller board should be normal when voltage of AC 220~240V is detected while fan motor is connected. Refer to 8-7. ⑤ Check outdoor fan motor. ⑥⑦ Check operating condition of refrigerant circuit. (Heating mode) ① Check clogs of the filter. ② Remove shields. ④ Measure the resistance of fan motor's winding. Measure the output voltage of fan's connector (FAN) on the indoor controller board. ※The indoor controller board should be normal when voltage of AC 220~240V is detected while fan motor is connected. Refer to 8-7. ⑤ Check outdoor fan motor. ⑥~⑧Check operating condition of refrigerant circuit.
P8	**Abnormality of pipe temperature** <Cooling mode> Detected as abnormal when the pipe temperature is not in the cooling range 3 minutes later of compressor start and 6 minutes later of the liquid pipe is out of cooling range. Note 1) It takes at least 9 min. to detect. Note 2) Abnormality P8 is not detected in drying mode. Cooling range : -3 deg ≧ (TH2-TH1) TH2: Liquid pipe temperature TH1: Intake temperature <Heating mode> When 10 seconds have passed after the compressor starts operation and the hot adjustment mode has finished, the unit is detected as abnormal when condenser/evaporator pipe temperature is not in heating range within 20 minutes. Note 3) It takes at least 27 minutes to detect abnormality. Note 4) It excludes the period of defrosting (Detection restarts when defrosting mode is over) Heating range : 3 deg ≦ (TH2-TH1)	① Slight temperature difference between indoor room temperature and pipe temperature thermistor • Shortage of refrigerant • Disconnected holder of pipe thermistor • Defective refrigerant circuit ② Converse connection of extension pipe (on plural units connection) ③ Converse wiring of indoor/outdoor unit connecting wire (on plural units connection) ④ Defective detection of indoor room temperature and pipe temperature thermistor ⑤ Stop valve is not opened completely.	①~④ Check pipe temperature with room temperature display on remote controller. ②③Check converse connection of extension pipe or converse wiring of indoor/outdoor unit connecting wire.
	Abnormality in outdoor unit	① Wrong wiring of indoor/outdoor connecting wire ② Reversed phase ③ Protection device is working ④ Damaged outdoor coil thermistor	① Check the indoor/outdoor connecting wire. ② Change the connection of electric wiring. ③ Check the protection device. ④ Measure the resistance of the outdoor coil thermistor. If the resistance is normal, replace the outdoor controller board.

Error Code	Meaning of error code and detection method	Cause	Countermeasure
E0 or E4	**Remote controller transmission error(E0)/signal receiving error(E4)** ① Abnormal if main or sub remote controller can not receive normally any transmission from indoor unit of refrigerant address “0” for three minutes. (Error code : E0) ② Abnormal if sub remote controller could not receive for any signal for two minutes. (Error code: E0) ① Abnormal if indoor controller board can not receive normally any data from remote controller board or from other indoor controller board for three minutes. (Error code: E4) ② Indoor controller board cannot receive any signal from remote controller for two minutes. (Error code: E4)	① Contact failure at transmission wire of remote controller ② All remote controllers are set as “sub” remote controller. In this case, E0 is displayed on remote controller, and E4 is displayed at LED (LED1, LED2) on the outdoor controller circuit board. ③ Mis-wiring of remote controller. ④ Defective transmitting receiving circuit of remote controller ⑤ Defective transmitting receiving circuit of indoor controller board of refrigerant address “0”. ⑥ Noise has entered into the transmission wire of remote controller.	① Check disconnection or looseness of indoor unit or transmission wire of remote controller. ② Set one of the remote controllers “main”. If there is no problem with the action above. ③ Check wiring of remote controller. • Total wiring length: max.500m (Do not use cable x 3 or more) • The number of connecting indoor units: max.16units • The number of connecting remote controller: max.2units When it is not the above-mentioned problem of ①~③ ④ Diagnose remote controllers. a) When “RC OK” is displayed, Remote controllers have no problem. Put the power off, and on again to check. If abnormality generates again, replace indoor controller board. b) When “RC NG” is displayed, Replace remote controller. c) When “RC E3” is displayed, d) When “ERC 00-06” is displayed, [c),d)→Noise may be causing abnormality.] ∗ If the unit is not normal after replacing indoor controller board in group control, indoor controller board of address “0” may be abnormal.
E3 or E5	**Remote controller transmission error(E3)/signal receiving error(E5)** ① Abnormal if remote controller could not find blank of transmission path for six seconds and could not transmit. (Error code: E3) ② Remote controller receives transmitted data at the same time, compares the data, and when detecting it, judges different data to be abnormal 30 continuous times. (Error code: E3) ① Abnormal if indoor controller board could not find blank of transmission path. (Error code: E5) ② Indoor controller board receives transmitted data at the same time, compares the data,and when detecting it, judges different data to be abnormal 30 continuous times. (Error code: E5)	① Two remote controller are set as “main.” (In case of 2 remote controllers) ② Remote controller is connected with two indoor units or more. ③ Repetition of refrigerant address. ④ Defective transmitting receiving circuit of remote controller. ⑤ Defective transmitting receiving circuit of indoor controller board. ⑥ Noise has entered into transmission wire of remote controller.	① Set a remote controller to main, and the other to sub. ② Remote controller is connected with only one indoor unit. ③ The address changes to a separate setting. ④~⑥ Diagnose remote controller. a) When “RC OK”is displayed, remote controllers have no problem. Put the power off,and on again to check. When becoming abnormal again, replace indoor controller board. b)When “RC NG”is displayed, replace remote controller. c)When “RC E3”or “ERC 00-66”is displayed, noise may be causing abnormality.

Error Code	Meaning of error code and detection method	Cause	Countermeasure
Fb	**Abnormality of indoor controller board** Abnormal if data cannot be normally read from the nonvolatile memory of the indoor controller board.	① Defective indoor controller board.	① Replace indoor controller board.
E1 or E2	**Abnormality of remote controller control board** ① Abnormal if data cannot be normally read from the nonvolatile memory of the remote controller control board. (Error code: E1) ② Abnormal if the clock function of remote controller cannot be normally operated. (Error code: E2)	① Defective remote controller.	① Replace remote controller.
PA (2502) (2500)	**Forced compressor stop (due to water leakage abnormality)** ① When the intake temperature subtracted with liquid pipe temperature is less than -10℃, drain sensor is detected whether it is soaked in the water or not at the interval of 90 seconds. (Drain pump will start operating when the drain sensor is detected to be soaked in the water.) ② The unit has a water leakage abnormality when the following conditions, a and b, are satisfied while the above-mentioned detection is performed. a) The drain sensor is detected to be soaked in the water 10 times in a row. b) The intake temperature subtracted with liquid pipe temperature is detected to be less than -10℃ for a total of 30 minutes. (When the drain sensor is detected to be NOT soaked in the water, the detection record of a and b will be cleared.) ③ The drain sensor detection is performed in operations other than cooling. (When the unit stops operating, during heating or fan operation, when the unit stops because of some abnormality) *Once the water leakage abnormality is detected, abnormality state will not be released until the main power is reset.	1) Drain pump trouble 2) Drain defective · Drain pump clogging · Drain pipe clogging 3) Open circuit of drain sensor side heater 4) Contact failure of drain sensor connector 5) Dew condensation on drain sensor · Drain water descends along lead wire. · Drain water waving due to filter clogging. 6) Extension piping connection difference at twin, triple, quadruple system. 7) Mis-wiring of indoor/ outdoor connecting at twin, triple, quadruple system. 8) Room temperature thermistor / liquid pipe temperature thermistor detection is defective.	Check the drain pump. Performance Please confirm whether water can be drained. Confirm the resistance of the drain sensor side heater. Check the connector contact failure. ① Check the drain sensor leadwire mounted. ② Check the filter clogging Check the piping connection. Check the indoor/ outdoor connecting wires. Check the room temperature display of remote controller. Check the indoor liquid pipe temperature display of outdoor controller board.

8-4. TROUBLESHOOTING BY INFERIOR PHENOMENA

Phenomena	Cause	Countermeasure
(1)LED2 on indoor controller board is off.	• When LED1 on indoor controller board is also off. ① Power supply of 220~240V AC is not supplied to indoor unit.	① Check the voltage of indoor power supply terminal block (L,N). • When AC220~240V is not detected. Check the power supply wiring. • When AC220~240V is detected. -Check ② (below).
	② Defective indoor controller board.	② Check voltage output from CNDK on indoor controller board. • When AC220~240V is not detected. Check the fuse on indoor controller board. Check the wiring connection between indoor power supply terminal block and CND on indoor controller board. • When AC220~240V is detected. -Check ③ (below).
	③ Defective indoor power board.	③ Check voltage output from CN2S on indoor power board. • When no voltage output. Check the wiring connection between CNDK on indoor controller board and CNSK on indoor power board. If no problem are found,indoor power board is defective. • When DC12.5~13.7V is detected. Check the wiring connection between CN2S on indoor power board and CN2D on indoor power board. If no problem are found,indoor controller board is defective.
	• When LED1 on indoor controller board is lit. ① Mis-setting of main/sub for indoor unit (There is no unit corresponding to main unit.)	① Reconfirm the setting of main/sub for indoor unit Set the main unit. Set main/sub using SW5-3 on indoor controller board.
(2)LED2 on indoor controller board is blinking.	• When LED1 on indoor controller board is also blinking. Connection failure of indoor/outdoor unit connecting wire	Check indoor/outdoor unit connecting wire for connection failure.
	• When LED1 is lit. ① Mis-wiring of remote controller wires When 2 indoor units are wired in one refrigerant system, each indoor unit sets main unit. (SW5-3)	① Check the connection of remote controller wires in case of twin triple indoor unit system. When 2 or more indoor units are wired in one refrigerant system, connect remote controller wires to one of those units.
	② Short-cut of indoor/outdoor unit connecting wire.	② Remove indoor/outdoor connecting wires and check LED2 on indoor controller board. • When LED2 is blinking, check the short-cut of indoor/outdoor connecting wires. • When LED2 is lit, connect indoor/outdoor connecting wires again, and; if LED2 is blinking, outdoor unit's controller board is defective; if LED2 is lit, connection failure of indoor/outdoor terminal block etc. has returned to normal.
	③ Short-cut of remote controller wires ④ Defective remote controller	③④ Remove remote controller wires and check LED2 on indoor controller board. • When LED2 is blinking, check the short-cut of remote controller wires. • When LED2 is lit, connect remote controller wires again and: if LED2 is blinking, remote controller is defective; if LED2 is lit, connection failure of remote controller terminal block etc. has returned to normal.

Phenomena	Cause	Countermeasure
(3)Upward/downward vane performance failure	① The vane is not downward during defrosting and heat preparation and when the thermostat is OFF in HEAT mode. (Working of COOL protection function) ② Vane motor does not rotate. • Defective vane motor • Breaking of wire or connection failure of connector • Up/down vane setting is “No vanes”. ③ Upward/downward vane does not work. • The vane is set to fixed position.	① Normal operation (The vane is set to horizontal regardless of remote control.) ② Check ② (left). • Check the vane motor. (Refer to “How to check the parts”.) • Check for breaking of wire or connection failure of connector. • Check “Up/down vane setting”. (Unit function selection by remote controller). ③ Normal operation (Each connector on vane motor side is disconnected.)
(4)Receiver for wireless remote controller	① Weak batteries of wireless remote controller. ② Contact failure of connector (CNB) on wireless remote controller board. (Insert failure) ③ Contact failure of connector (CN90) on indoor controller board.(Insert failure) ④ Contact failure of connector between wireless remote controller board and indoor controller board.	① Replace batteries of wireless remote controller. ②~④ Check contact failure of each connector. If no problems are found of connector, replace indoor controller board. When the same trouble occurs even if indoor controller board is replaced, replace wireless remote controller board.

8-5. TEST RUN AND EMERGENCY OPERATION

8-5-1. Before test run

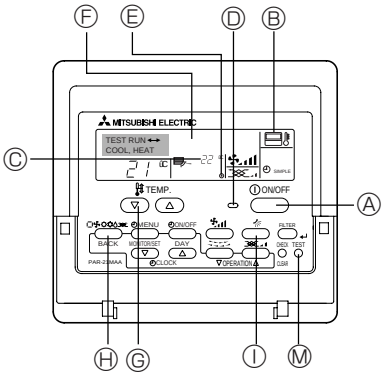
4 **After completing installation and the wiring and piping of the indoor and outdoor units, check for refrigerant leakage, looseness in the power supply or control wiring, wrong polarity, and no disconnection of one phase in the supply.**

4 **Use a 500-volt megohmmeter to check that the resistance between the power supply terminals and ground is at least 1.0MΩ.**

4 **Do not carry out this test on the control wiring (low voltage circuit) terminals.**

⚠ **Warning:**
Do not use the air conditioner if the insulation resistance is less than 1.0MΩ.
Insulation resistance

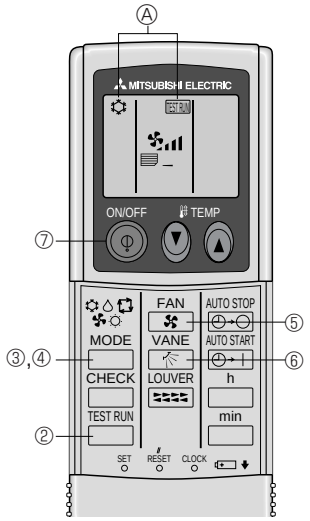
8-5-2. Test run (Using wired remote controller)



Ⓐ ON/OFF button
Ⓑ Test run display
Ⓒ Indoor temperature liquid line temperature display
Ⓓ ON/OFF lamp
Ⓔ Power display
Ⓕ Error code display
Test run remaining time display
Ⓖ Set temperature button
Ⓗ Mode selection button
Ⓘ Fan speed button
Ⓜ TEST button

① Turn on the power at least 12 hours before the test run.
② Press the [TEST] button twice. ➜ "TEST RUN" liquid crystal display
③ Press the [Mode selection] button. Make sure that wind is blown out.
④ Press the [Mode selection] button and switch to the cooling (or heating) mode.
➜ Make sure that cold (or warm) wind is blown out.
⑤ Press the [Fan speed] button. ➜ Make sure that the wind speed is switched.
⑥ Check operation of the outdoor unit fan.
⑦ Release test run by pressing the [ON/OFF] button. ➜ Stop
⑧ Register a telephone number.
The telephone number of the repair shop, sales office, etc., to contact if an error occurs can be registered in the remote controller. The telephone number will be displayed when an error occurs. For registration procedures, refer to the operation manual for the indoor unit.

8-5-3. Test run (Using wireless remote controller)



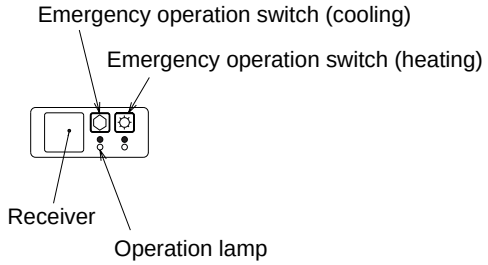
① Turn on the power to the unit at least 12 hours before the test run.
② Press the TEST RUN button twice continuously.
(Start this operation from the status of remote controller display turned off.)
Ⓐ TEST RUN and current operation mode are displayed.
③ Press the MODE (☼ ♢ ✣ ☼ ⟳) button to activate COOL☼ mode, then check whether cool air is blown out from the unit.
④ Press the MODE (☼ ♢ ✣ ☼ ⟳ button to activate HEAT☼ mode, then check whether cool air is blown out from the unit.
⑤ Press the FAN button and check whether fan speed changes.
⑥ Press the VANE button and check whether the auto vane operates properly.
⑦ Press the ON/OFF button to stop the test run.

Note:
- **Point the remote controller towards the indoor unit receiver while following steps ② to ⑥.**
- **It is not possible to run the in FAN or DRY mode.**

8-5-4. When wireless remote controller troubles or its battery is exhausted

1. Emergency operation is available in such a case using emergency operation switch equipped next to the receiver of indoor unit.
2. To start operation
   - Cooling Operation·····Press (Cooling) switch.
   - Heating Operation·····Press (Heating) switch.

   ※When the unit starts operating, the operation lamp is lit.



※Emergency operation will be performed as follows.

Mode	Cooling	Heating
Set temperature	24℃	24℃
Fan speed	High	High
Airflow direction	Horizontal (30deg)	Downward (70deg)

3. To stop operation
   - Press either emergency operation switch (cooling/heating).

8-5-5. When wired remote controller or indoor unit micro computer troubles

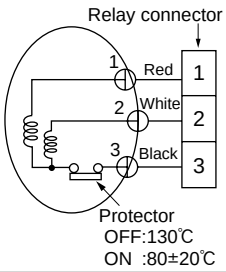
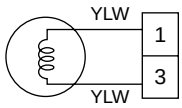
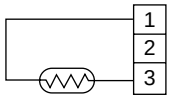
1.When the wired remote control or the indoor unit microcomputer has failed,but all other compornents work if you set the switch (SWE, SW6) on the indoor control board, the indoor unit will begin properly Emergency Operation.
※Note on the wireless remote control: when the remote control does not function, it is possible to activate Emergency Operation by using the indoor unit emergency operation switch (SW1,SW2 of the wireless signal receiver board).
However,if the indoor unit microcomputer has failed,it is nesessary to proceed with points 2 and 3 below as in the case of the wired remote controller.

2.When you activate emergency operation of the cooling or heating, you have to set the switch (SWE) and switch (SW6) on the indoor controller.
SWE : ON • Indoor fan is running at high speed. • Drain-up machine is working.
SW6-1 : ON • Emergency operation of cooling mode.
SW6-1,2 : ON • Emergency operation of heating mode.

3.Before you activate emergency operation, check the following points:
(1) Emergency operation cannot be activated when:
• the outdoor unit malfunctions. • the indoor fan malfunctions.
• when it has detected the malfunction of drain-up machine during self-diagnosing.
(2) Emergency operation becomes continuous only by switching the power source on/off. ON/OFF on the remote control or temperature control etc,dose not function.
(3) Avoid operating for a long time when the outdoor unit begins defrosting while emergency operation of the heating is activated, because it will start to blow cold air.
(4) Emergency cooling should be limited to 10 hours maximum (The indoor unit heat exchanger may freeze).
(5) After emergency operation has been deactivated, set the switches etc.to their original positions.
(6) Movement of the vanes does not work in emergency operation, therefore you have to slowly set them manually to the appropriate position.

8-6. HOW TO CHECK THE PARTS

PLH-3AAK PLH-4AAK PLH-5AAK PLH-6AAK
PLH-3AAKH PLH-4AAKH PLH-5AAKH PLH-6AAKH

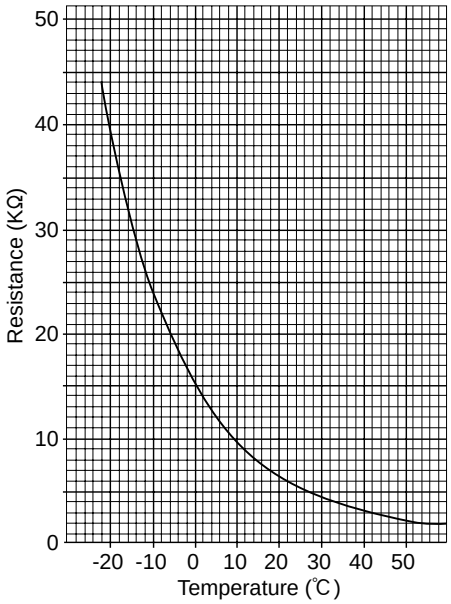
<table>
<tr><th>Parts name</th><th>Check points</th></tr>
<tr><td>Room temperature thermistor (TH1)
Pipe temperature thermistor/liquid(TH2)</td><td>Disconnect the connector then measure the resistance using a tester.
(Surrounding temperature 10℃~30℃)
<table><tr><th>Normal</th><th>Abnormal</th></tr><tr><td>4.3kΩ~9.6kΩ</td><td>Open or short</td></tr></table>(Refer to the thermistor)</td></tr>
<tr><td>Vane motor</td><td>Measure the resistance between the terminals using a tester.
(Surrounding temperature20℃)
<table><tr><th>Normal</th><th>Abnormal</th></tr><tr><td>15kΩ</td><td>Open or short</td></tr></table></td></tr>
<tr><td>Fan motor
 
</td><td>Measure the resistance between the terminals using a tester.
(Winding temperature 20℃)
<table><tr><th rowspan="2">Motor terminal
or
Relay connector</th><th colspan="2">Normal</th><th rowspan="2">Abnormal</th></tr><tr><th>PLH-3AAK(H)</th><th>PLH-4,5,6AAK(H)</th></tr><tr><td>Red-Black</td><td>87.2Ω</td><td>28.7Ω</td><td rowspan="2">Open or short</td></tr><tr><td>White-Black</td><td>104.1Ω</td><td>41.6Ω</td></tr></table></td></tr>
<tr><td>Drain pump
 
</td><td>Measure the resistance between the terminals using a tester.
(Winding temperature 20℃)
<table><tr><th>Normal</th><th>Abnormal</th></tr><tr><td>290Ω</td><td>Open or short</td></tr></table></td></tr>
<tr><td>Drain sensor
 
</td><td>Measure the resistance between the terminals using a tester.
Measure the resistance after 3 minutes have passed since the power supply was intercepted.
(Surrounding temperature 0℃~60℃)
<table><tr><th>Normal</th><th>Abnormal</th></tr><tr><td>0.6kΩ~6.0kΩ</td><td>Open or short</td></tr></table>(Refer to the thermistor)</td></tr>
</table>

<Thermistor Characteristic graph>

Thermistor for lower temperature

Room temperature thermistor(TH1)
Pipe temperature thermistor/liquid(TH2)

< Thermistor for lower temperature >



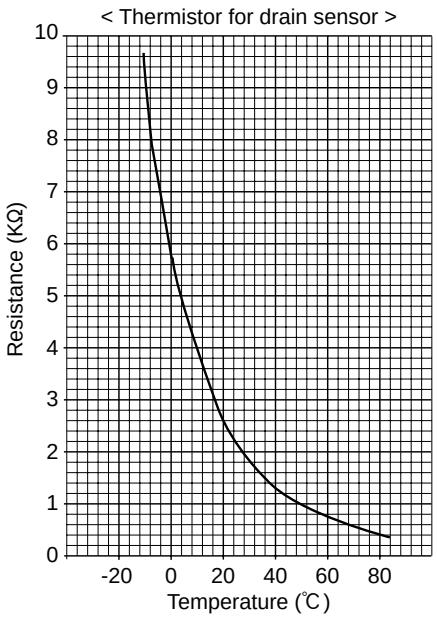
Thermistor R_0=15kΩ ± 3%
Fixed number of B=3480 ± 2%

$$Rt=15\exp\{3480(\frac{1}{273+t}-\frac{1}{273})\}$$

0℃	15kΩ
10℃	9.6kΩ
20℃	6.3kΩ
25℃	5.4kΩ
30℃	4.3kΩ
40℃	3.0kΩ

Thermistor for drain sensor

< Thermistor for drain sensor >



Thermistor R_0=6.0kΩ ±5%
Fixed number of B=3390 ±2%

$$Rt=6\exp\{3390(\frac{1}{273+t}-\frac{1}{273})\}$$

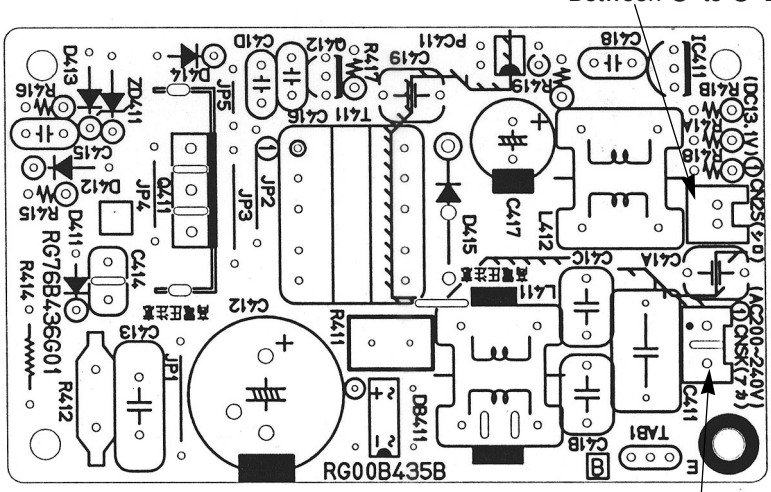
0℃	6.0kΩ
10℃	3.9kΩ
20℃	2.6kΩ
25℃	2.2kΩ
30℃	1.8kΩ
40℃	1.3kΩ
60℃	0.6kΩ

8-7.TEST POINT DIAGRAM

8-7-1. Power board

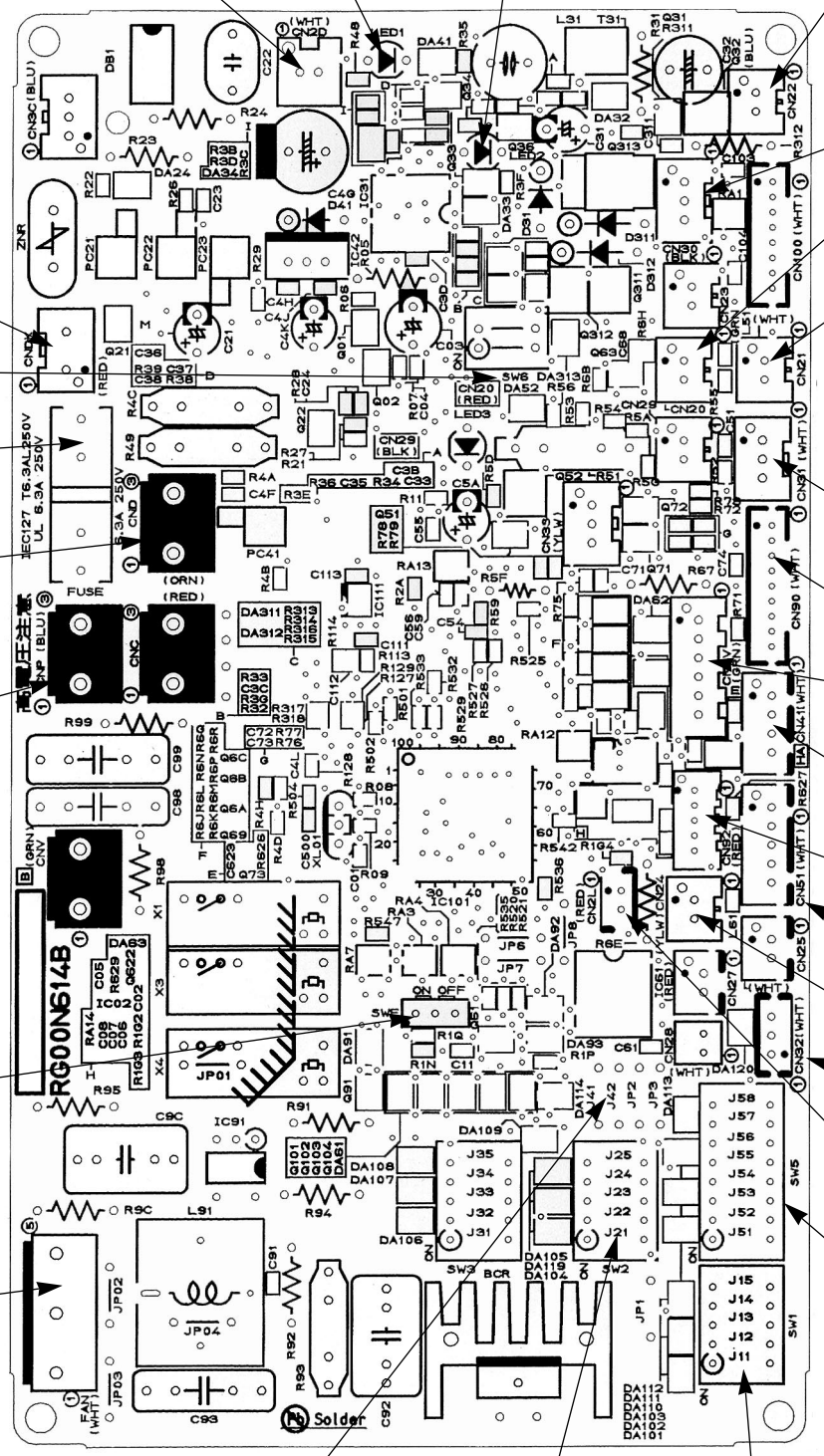
PLH-3AAK(H) PLH-4AAK(H) PLH-5AAK(H) PLH-6AAK(H)

CN2S
Connect to the indoor controller board (CN2D)
Between ① to ③ 12.6-13.7V DC (Pin① (+))



CNSK
Connect to the indoor controller board (CNDK)
Between ① to ③ 220-240V AC

8-7-2. Indoor controller board
PLH-3AAK(H) PLH-4AAK(H) PLH-5AAK(H) PLH-6AAK(H)



CN2D
Connect to the indoor power board (CN2S)
(12.5~13.7V DC)

LED1
Power supply (I.B)

LED2
Power supply (R.B)

CN22
Connect to the terminal block(TB5)
(Remote controller connecting wire)
(10.4~14.6V DC)

CN30
Transmission
(indoor/outdoor)

CN20
Room temperature thermistor (TH1)

CN21
Pipe temperature thermistor/Liquid (TH2)

CNDK
Connect to the indoor power board (CNSK)
(220~240V AC)

SW6
Emergency operation

FUSE
(6.3 A 250 V)

CND
Power supply input
(220~240V AC)

CNP
Drain-pump output
(DP)
(220~240V AC)

SWE
Emergency operation

FAN
Fan motor output

CN31
Drain sensor (DS)

CN90
Connect to the wireless remote controller board
(CNB)

CN6V
Vane motor output
(MV)

CN41
Connector (HA terminal-A)

CN105/CN92
(RED)

CN51
Centrally control

CN24
Heater output
(12V DC)

CN32
Remote switch

CN2L
Connector
(LOSSNAY)

SW5
System setting

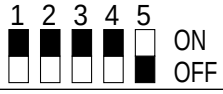
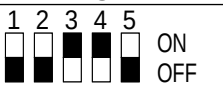
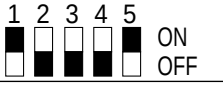
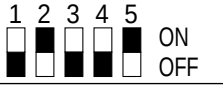
Jumper wire J41, J42
Pair number setting with wireless remote controller

SW2
Capacity setting

SW1
Model setting

8-8. FUNCTIONS OF DIP SWITCH AND JUMPER WIRE

Each function is controlled by the dip switch and the jumper wire on control p.c. board.

<table>
<tr><th>Jumper wire</th><th>Functions</th><th>Setting by the dip switch and jumper wire</th><th>Remarks</th></tr>
<tr><td>SW1</td><td>Model settings</td><td>
<table>
<tr><th>MODELS</th><th>SW1</th></tr>
<tr><td>PLH-AAK</td><td> 
</td></tr>
<tr><td>PLH-AAKH</td><td>
</td></tr>
</table>
</td><td></td></tr>
<tr><td>SW2</td><td>Capacity settings</td><td>
<table>
<tr><th>MODELS</th><th>SW2</th></tr>
<tr><td>PLH-3AAK
PLH-3AAKH</td><td> 
</td></tr>
<tr><td>PLH-4AAK
PLH-4AAKH</td><td>
</td></tr>
<tr><td>PLH-5AAK
PLH-5AAKH</td><td> 
</td></tr>
<tr><td>PLH-6AAK
PLH-6AAKH</td><td> 
</td></tr>
</table>
</td><td></td></tr>
<tr><td>SW5</td><td>System settings</td><td>
<table>
<tr><th>MODELS</th><th>SW5</th></tr>
<tr><td>PLH-AAK</td><td>
</td></tr>
<tr><td>PLH-AAKH</td><td>
</td></tr>
</table>
</td><td>SW5-3 Main/Sub setting
OFF : Main ON : Sub
SW5-4 Rotaion operation setting
OFF : Not avairable ON : avairable</td></tr>
<tr><td>J41
J42</td><td>Pair number setting with wireless remote controller</td><td>
<table>
<tr><th rowspan="2">Wireless remote controller setting</th><th colspan="2">Control PCB setting</th></tr>
<tr><th>J41</th><th>J42</th></tr>
<tr><td>0</td><td>○</td><td>○</td></tr>
<tr><td>1</td><td>×</td><td>○</td></tr>
<tr><td>2</td><td>○</td><td>×</td></tr>
<tr><td>3 ~ 9</td><td>×</td><td>×</td></tr>
</table>
</td><td><Settings at time of factory shipment>
Wireless remote controller: 0
Control PCB: ○ (for both J41 and J42)
Four pair number settings are supported.
The pair number settings of the wireless remote controller and indoor control PCB (J41/J42) are given in the table on the left.
('×' in the table indicates the jumper line is disconnected.)</td></tr>
</table>

8-9 OUTDOOR UNIT SERVICE FUNCTIONS (OUTDOOR CONTROLLER BOARD)

(1) Compulsory defrosting

①When all of the following conditions are satisfied, pressing SW2 starts the compulsory defrosting.

- During HEAT mode
- The compressor is ON.
- The outdoor coil temperature is being displayed by LED. (Outdoor controller board dip switch SW3-1 : OFF, SW3-2 : ON)
- The outdoor coil thermistor reads 8°C or below.

②The operation state and the termination conditions of the compulsory defrosting are the same as those of the normal defrosting. As an exception, the defrost interval after the defrosting completion is 50 minutes.

(2) Fixed fan-output

While the compressor is operating (except during defrosting) and the fan output step is indicated by LED, pressing SW2 fixes the fan output. The fixed fan-output can be released when any of the following conditions are satisfied.

①SW2 is pressed again.
②SW3 setting is changed.
③The compressor stops.
④Defrosting operation starts.

(3) Function of switches on the outdoor controller board

SW1: Clears the check code memory (push-button switch)
SW2: Switches the output state indication and the check code display (push-button switch)
SW3-1,2: Switches the output state indication items (dip switch)

(4) 100% fan output

Fan output is fixed to 100% by shorting the connector CN22. However, the fan stops during compressor OFF or defrosting. Open-circuit of CN22 restarts the normal fan control.

(5) Time shortening

Short circuit of the connector CN21 shortens the time as follows

①Fan control period: 30 seconds → 3 seconds
②Three-minutes time delay function : 3 minutes → 3 seconds
③Max. time of defrosting : 15 minutes → 15 seconds
④Defrost interval : 30 ~ 120 minutes → 3 ~ 12 seconds
⑤Compressor ON/OFF time for bypass valve ON/OFF : 30 minutes → 3 seconds
⑥Compressor ON time to start other functions : x minutes → x seconds
⑦Crankcase heater operation : 1 hour → 6 seconds

(6) Crankcase heater control

①With jumper wire J3
The crankcase heater is ON from when the power is turned ON until the compressor starts, and then turns ON one hour after the compressor stops.
②Without jumper wire J3
The crankcase heater is ON from when the power is turned ON until the compressor starts, and repeats 1-hour ON and 1-hour OFF, after the compressor stops.

9 FUNCTION SETTING

9-1. UNIT FUNCTION SETTING BY THE REMOTE CONTROLLER

Each function can be set according to necessity using the remote controller. The setting of function for each unit can only be done by the remote controller. Select function available from the table 1.

<Table 1> Function selections

(1) Functions available when setting the unit number to 00 (Select 00 referring to ④ setting the indoor unit number.)

※1 The functions below are available only when the wired remote controller is used.The functions are not available for floor standing models.

Function	Settings	Mode No.	Setting No.	Initial setting (when sent from the factory)	Remarks
Power failure automatic recovery	OFF	01	1	●	The setting is applied to all the units in the same refrigerant system.
	ON		2		
Indoor temperature detecting	Indoor unit's (Main) internal sensor	02	1	●	
			2		
	Remote controller's internal sensor		3		
LOSSNAY connectivity	Not supported	03	1	●	
	Supported (indoor unit not equipped with outdoor air intake)		2		
	Supported (indoor unit equipped with outdoor air intake)		3		
Power supply voltage	240V	04	1		
	220V,230V		2	●	
Frost prevention temperature	1℃ (Normal)	15	1	●	
	-3℃		2		
Humidifier control	When the compressor operates, the humidifier also operates.	16	1	●	
	When the fan operates, the humidifier also operates.		2		
Rotation	24h cycle	20	1		
	168cycle		2		
	Back up function		3	●	

(2) Functions available when setting the unit number to 01-03 or AL (07 in case of wireless remote controller)

- When setting functions for an indoor unit in an independent system, set the unit number to 01 referring to ④ setting the indoor unit number.
- When setting functions for a simultaneous- Twin Triple indoor unit system, set the unit number to 01 to 03 for each indoor unit in case of selecting different functions for each unit referring to ④ setting the indoor unit number.
- When setting the same functions for an entire simultaneous Twin Triple-indoor unit system, set refrigerant address to AL (07 in case of wireless remote controller) referring to ④ setting the indoor unit number.

Function	Settings	Mode No.	Setting No.	Initial setting (Factory setting) - : Not available					
				4-Way cassette		Ceiling concealed	Ceiling suspended	Wall mounted	Floor standing
				PLH-AAK(H)	PLH-KAK(H)	PEH-EAK(H) PEHD-EAK(H)	PCH-GAK(H)	PKHGAKL(H) PKA-FAKL(H)	PSH-GAK(H)
Filter sign	100Hr	07	1					●	
	2500Hr		2	●	●		●		●
	No filter sign indicator		3			●			
Air flow (Fan speed)	Quiet / Standard / High ceiling① } PLH-AAK(H)	08	1	●		-		-	-
	Standard / High ceiling① } PLH-AAK(H)		2		●	-	●	-	-
	High ceiling / High ceiling② } PLH-AAK(H)		3			-		-	-
No.of air outlets	4 directions	09	1	●	●	-	-	-	-
	3 directions		2			-	-	-	-
	2 directions		3		-	-	-	-	-
Optional high efficiency filter	Not supported	10	1	●	●	-	●	-	-
	Supported		2			-		-	-
Vane setting	No vanes (Vane No.3 setting:PLH-AAK(H)only)	11	1			-		-	-
	Vane No.1 setting		2	●	●	-	●	-	-
	Vane No.2 setting		3			-		-	-
Energy saving air flow (Heating mode)	Disabled	12	1	●	●	-	●	-	-
	Enabled		2			-		-	-
Optional humidifier (PLH-AAK(H) only)	Not supported	13	1	●	-	-	-	-	-
	Supported		2		-	-	-	-	-
Vane differential setting in heating mode (cold wind prevention)	No.1 setting (TH2: 24-28℃)	14	1			-			-
	No.2 setting (Standard, TH2:28-32℃)		2	●	●	-	●	●	-
	No.3 setting (TH2: 32-38℃)		3			-			-
Swing	Not available	23	1			-			-
	Available		2	●	●	-	●	●	-
Set temperature in heating mode (4 deg up)	Available	24	1	●	●	●	●	●	
	Not available		2						●
Fan speed when the heating thermostat is OFF	Extra low	25	1	●	●	●	●	●	●
	Stop		2						
	Set fan speed		3						
Quiet operation mode of PLH-AAK(H)(Fan speed)	Disabled (Standard)	26	1	●	-	-	-	-	-
	Enabled (Quiet operation mode)		2		-	-	-	-	-
Fan speed when the cooling thermostat is OFF	Set fan speed	27	1	●	●	●	●	●	●
	Stop		2						
Detection of abnormality of the pipe temperature (P8)	Available	28	1	●	●	●	●	●	●
	Not available		2						

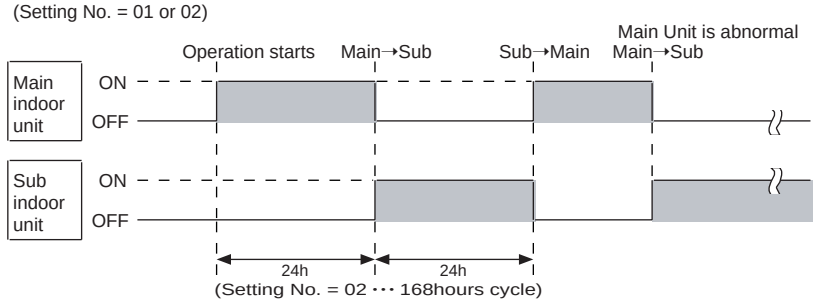
Rotation setting (Function setting mode No.20)

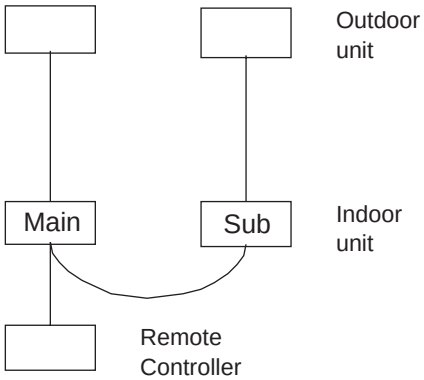
Function setting		Features	Indoor controller board	
Mode No.	Setting No.		SW5-3 setting	SW5-4 setting
19	01 (24hours cycle)	Each system operates alternately for 24hours.	OFF : Main ON : Sub	ON
	02 (168hours cycle)	Each system operates alternately for 168hours.		
	03 (Back up function)	When abnormality occurs while operating, it changes as a back up unit, and operating continues.		

This system can correspond only by the pattern of two refrigerant group by 1 : 1 (indoor and outdoor unit combination) systems.

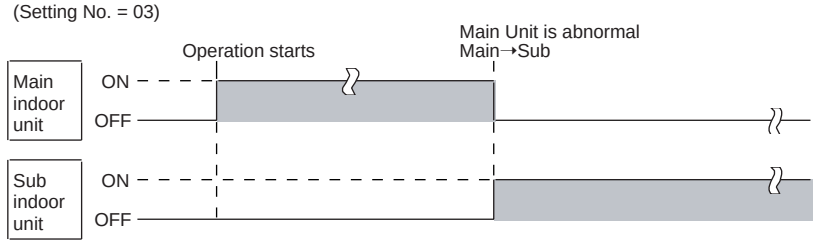
Example of unit's operation

(Setting No. = 01 or 02)





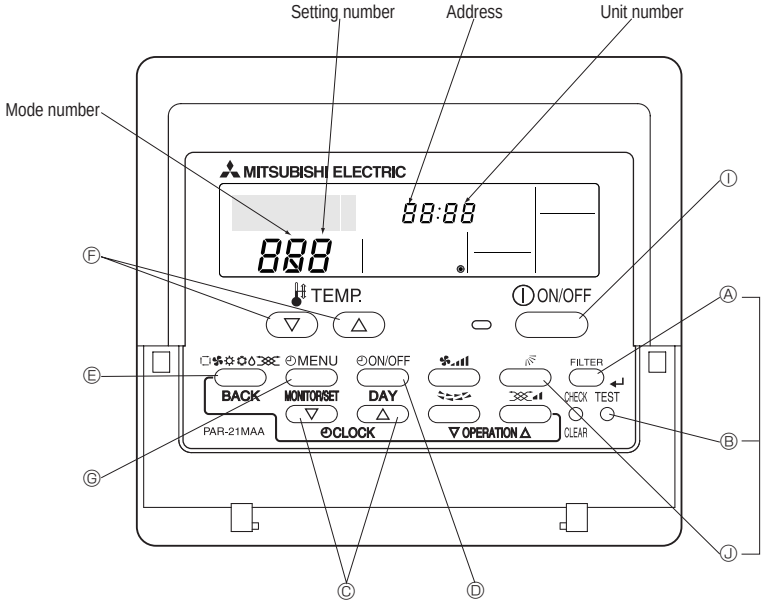
(Setting No. = 03)



9-1-1. Selecting functions using the wired remote controller

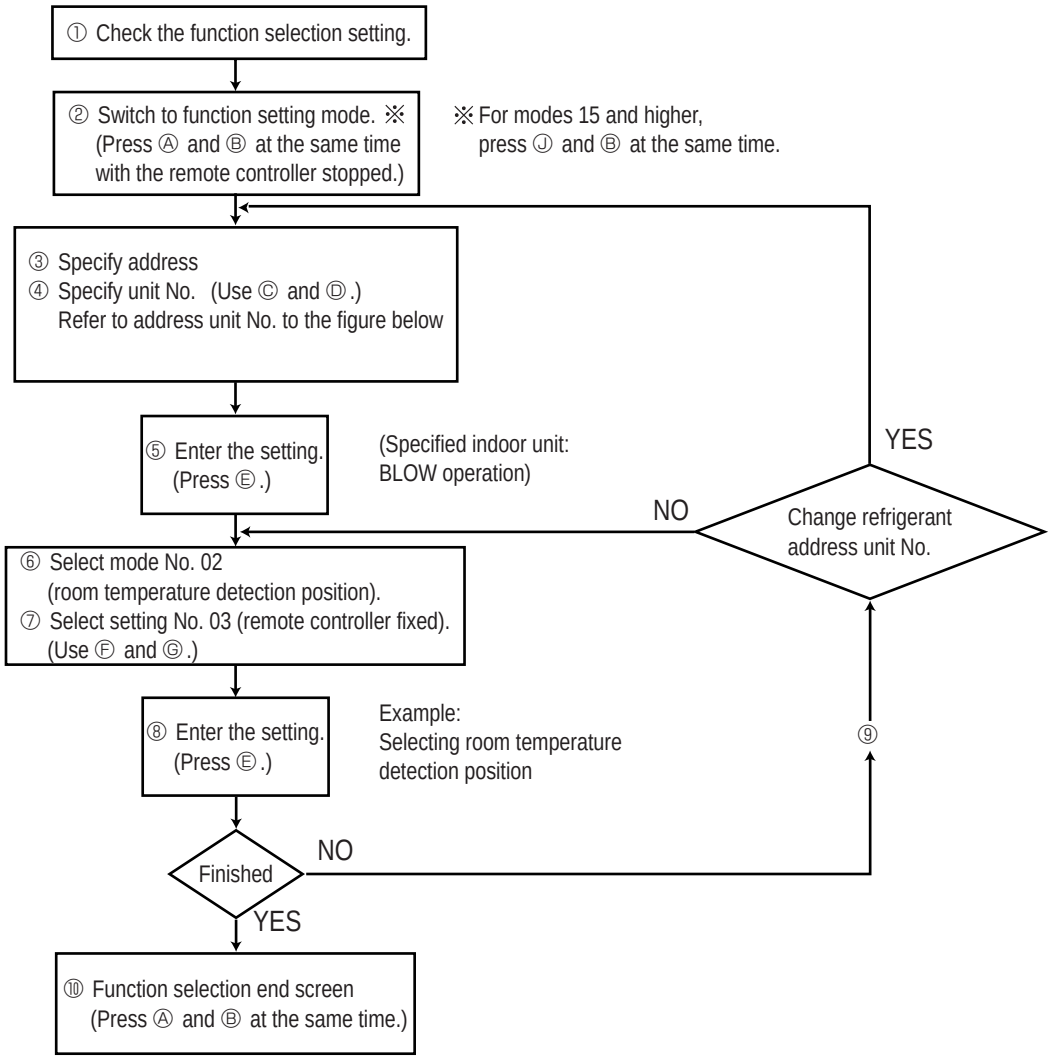
First, try to familiarize yourself with the flow of the function selection procedure. In this section, an example of setting the room temperature detection position is given.

For actual operations, refer to steps ① to ⑩.



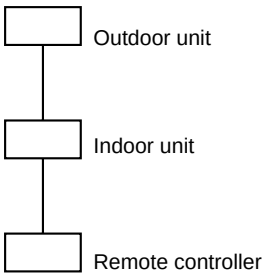
Modes 01 to 13 can be activated by pressing buttons Ⓐ and Ⓑ simultaneously, and modes 15 to 28 by pressing buttons Ⓑ and Ⓙ.

Selecting functions using the wired remote controller


① Check the function selection setting.
② Switch to function setting mode. ※
(Press Ⓐ and Ⓑ at the same time
with the remote controller stopped.)
※ For modes 15 and higher,
press Ⓙ and Ⓑ at the same time.
③ Specify address
④ Specify unit No. (Use Ⓒ and Ⓓ.)
Refer to address unit No. to the figure below
⑤ Enter the setting.
(Press Ⓔ.)
(Specified indoor unit:
BLOW operation)
YES
NO
Change refrigerant
address unit No.
⑥ Select mode No. 02
(room temperature detection position).
⑦ Select setting No. 03 (remote controller fixed).
(Use Ⓕ and Ⓖ.)
⑧ Enter the setting.
(Press Ⓔ.)
Example:
Selecting room temperature
detection position
⑨
Finished
NO
YES
⑩ Function selection end screen
(Press Ⓐ and Ⓑ at the same time.)

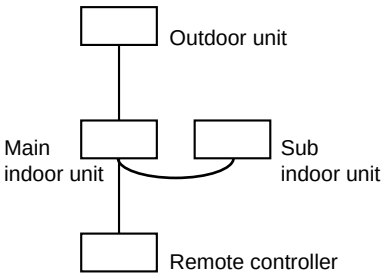
The above procedure must be carried out only if changes are necessary.

1 : 1 system



Indoor unit
address = 00
unit No. = 01

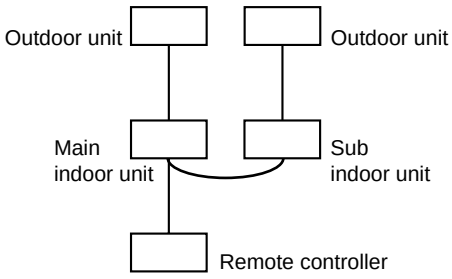
Simultaneous twin system



Main indoor unit
address = 00
unit No. = 01

Sub indoor unit
address = 01
unit No. = 02

Rotation system



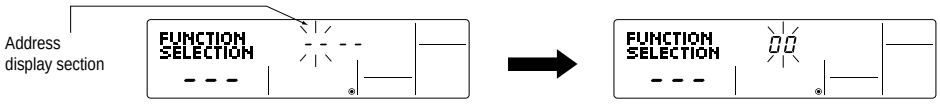
Main indoor unit
address = 00
unit No. = 01

Sub indoor unit
address = 01
unit No. = 01

[Operating Procedure]

① Check the setting items provided by function selection.
If settings for a mode are changed by function selection, the functions of that mode will be changed accordingly. Check all the current settings according to steps ② to ⑦, fill in the "Check" column in Table 1, and then change them as necessary. For factory settings, refer to the indoor unit's installation manual.

② Switch off the remote controller.
Ⓐ Hold down the FILTER and (mode 15 or more) Ⓑ TEST buttons simultaneously for at least two seconds. FUNCTION SELECTION will start to flash, and then the remote controller's display content will change as shown below.

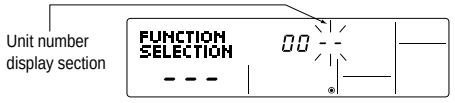


* If the unit stops after FUNCTION SELECTION flashed for two seconds or "88" flashes in the room temperature display area for two seconds, a transmission error may have occurred. Check to see if there are any sources of noise or interference near the transmission path.

Note
If you have made operational mistakes during this procedure, exit function selection (see step ⑩), and then restart from step ②.

③ Set the outdoor address.
Ⓒ Press the [CLOCK] buttons (▽ and △) to select the desired address. The address changes from "00" to "15".

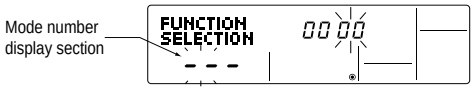
④ Set the indoor unit number.
Ⓓ Press the ON/OFF button so that "- -" flashes in the unit number display area.



Ⓒ Press the [CLOCK] buttons (▽ and △) to select the unit number of the indoor unit for which you want to perform function selection. The unit number changes to "00", "01", "02","03",04" and "AL" each time a button is pressed.

* To set modes 01 to 06 or 15 to 22 select unit number "00".
* To set modes 07 to 14 or 23 to 28 carry out as follows:
- To set each indoor unit individually, select "01" to "04".
- To set all the indoor units collectively, select "AL".

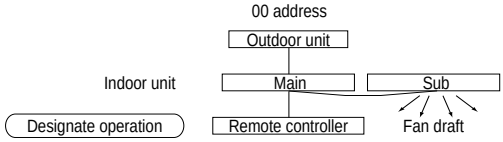
⑤ Confirm the address and unit number.
Ⓔ Press the MODE button to confirm the address and unit number.
After a while, "- - " will start to flash in the mode number display area.



* "88" will flash in the room temperature display area if the selected address does not exist in the system.
Furthermore, if "F" appears and flashes in the unit number display area and the address display area also flashes, there are no units that correspond to the selected unit number. In this case, the address and unit number may be incorrect, so repeat steps ② and ③ to set the correct ones.

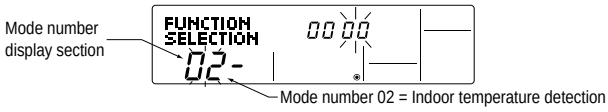
Ⓔ When the address and unit number are confirmed by pressing the MODE button, the corresponding indoor unit will start fan operation. This helps you find the location of the indoor unit for which you want to perform function selection. However, if "00" or "AL" is selected as the unit number, all the indoor units corresponding to the specified address will start fan operation.

Example) When the address is set to 01 and the unit number is 02.

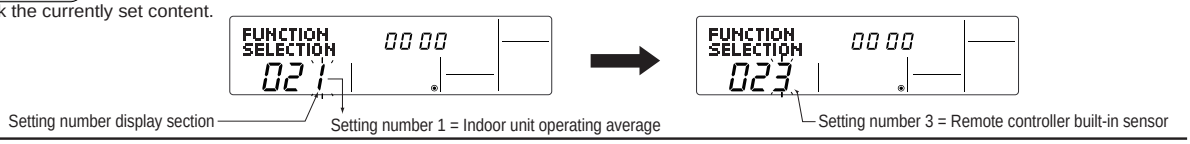


* When grouping different systems, if an indoor unit other than the one to which the address has been set performs fan operation, there may be another address that is the same as the specified one. In this case, check the DIP switch of the outdoor unit to see whether such a address exists.

⑥ Select the mode number.
Ⓕ Press the [TEMP] buttons (▽ and △) to set the desired mode number.
(Only the selectable mode numbers can be selected.)



⑦ Select the setting content for the selected mode.
Ⓖ Press the MENU button. The currently selected setting number will flash, so check the currently set content.


FUNCTION SELECTION
Setting number display section
Setting number 1 = Indoor unit operating average
Setting number 3 = Remote controller built-in sensor

Ⓕ Press the [TEMP] buttons (▽ and △) to select the desired setting number.

⑧ Register the settings you have made in steps ③ to ⑦.
Ⓔ Press the MODE button. The mode number and setting number will start to flash and registration starts.

The mode number and setting number will stop flashing and remain lit, indicating the end of registration.

* If "- - - " is displayed for both the mode number and setting number and "88" flashes in the room temperature display area, a transmission error may have occurred. Check to see if there are any sources of noise or interference near the transmission path.

⑨ If you wish to continue to select other functions, repeat steps ③ to ⑧.

⑩ Complete function selection.
Ⓐ Hold down the FILTER and (mode 15 or more) TEST buttons simultaneously for at least two seconds.
After a while, the function selection screen will disappear and the air conditioner OFF screen will reappear.

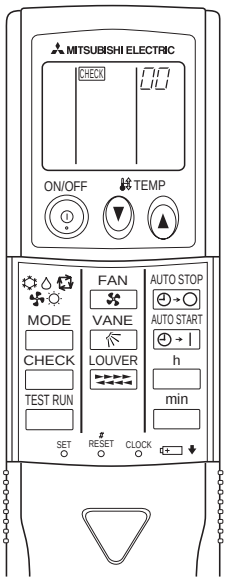
* Do not operate the remote controller for at least 30 seconds after completing function selection. (No operations will be accepted even if they are made.)

Note
If a function of an indoor unit is changed by function selection after installation is complete, make sure that a "○" mark, etc., is given in the "Check" column of Table 1 to indicate the change.

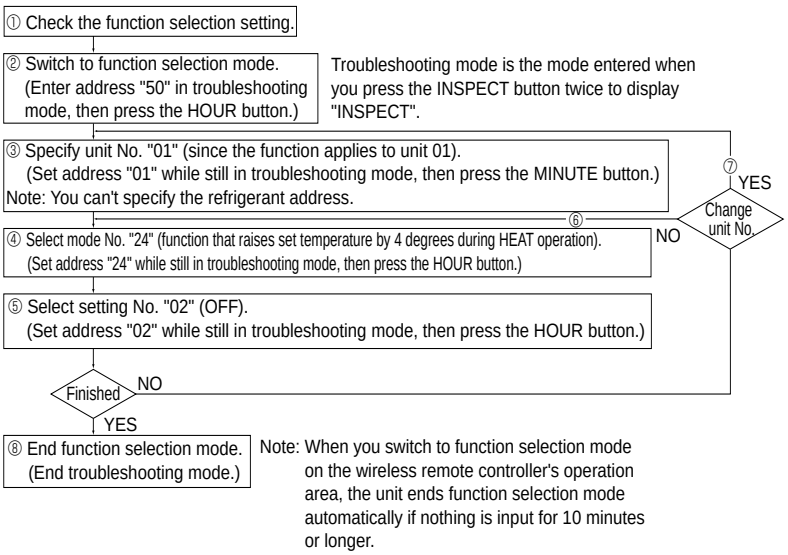
9-1-2. Selecting functions using the wireless remote controller (Type C)

Functions can be selected with the wireless remote controller. Function selection using wireless remote controller is available only for refrigerant system with wireless function. Address cannot be specified by the wireless remote controller.

[Flow of function selection procedure]



The flow of the function selection procedure is shown below. This example shows how to turn off the function that raises the set temperature by 4 degrees during HEAT operation .
The procedure is given after the flow chart.


① Check the function selection setting.
② Switch to function selection mode. (Enter address "50" in troubleshooting mode, then press the HOUR button.)
Troubleshooting mode is the mode entered when you press the INSPECT button twice to display "INSPECT".
③ Specify unit No. "01" (since the function applies to unit 01). (Set address "01" while still in troubleshooting mode, then press the MINUTE button.)
Note: You can't specify the refrigerant address.
⑦
YES
Change unit No.
⑥
④ Select mode No. "24" (function that raises set temperature by 4 degrees during HEAT operation). (Set address "24" while still in troubleshooting mode, then press the HOUR button.)
NO
⑤ Select setting No. "02" (OFF). (Set address "02" while still in troubleshooting mode, then press the HOUR button.)
Finished
NO
YES
⑧ End function selection mode. (End troubleshooting mode.)
Note: When you switch to function selection mode on the wireless remote controller's operation area, the unit ends function selection mode automatically if nothing is input for 10 minutes or longer.

[Operating instructions]

① Check the function settings.

② Press the CHECK button twice continuously. → CHECK is lit and "00" blinks.
Press the temp button once to set "50". Direct the wireless remote controller toward the receiver of the indoor unit and press the h button.

③ Set the unit number.
Press the temp button to set the unit number. (Press "01" to specify the indoor unit whose unit number is 01.)
Direct the wireless remote controller toward the receiver of the indoor unit and press the min button.

(By setting unit number with the min button, specified indoor unit starts performing fan operation.
Detect which unit is assigned to which number using this function. If unit number is set to AL, all the indoor units in same refrigerant system start performing fan operation simultaneously.)

* If a unit number that cannot be recognized by the unit is entered, 3 beeps of 0.4 seconds will be heard. Reenter the unit number setting.
* If the signal was not received by the sensor, you will not hear a beep or a "double beep" may be heard. Reenter the unit number setting.

④ Select a mode.
Press the temp button to set a mode. Press "24" to turn on the function that raises the set temperature by 4 degree during heat operation. Direct the wireless remote controller toward the sensor of the indoor unit and press the h button.
→ The sensor-operation indicator will flash and beeps will be heard to indicate the current setting number.
Current setting number: 1 = 1 beep (one second)
2 = 2 beeps (one second each)
3 = 3 beeps (one second each)

* If a mode number that cannot be recognized by the unit is entered, 3 beeps of 0.4 seconds will be heard. Reenter the mode number.
* If the signal was not received by the sensor, you will not hear a beep or a "double beep" may be heard. Reenter the mode number.

⑤ Select the setting number.
Press the temp button to select the setting number. (02: Not available)
Direct the wireless remote controller toward the receiver of the indoor unit and press the h button.
→ The sensor-operation indicator will flash and beeps will be heard to indicate the the setting number.
Setting number: 1 = 2 beeps (0.4 seconds each)
2 = 2 beeps (0.4 seconds each, repeated twice)
3 = 2 beeps (0.4 seconds each, repeated three times)

* If a setting number that cannot be recognized by the unit is entered, the setting will turn back to the original setting.
* If the signal was not received by the sensor, you will not hear a beep or a "double beep" may be heard. Reenter the setting number.

⑥ Repeat steps ④ and ⑤ to make an additional setting without changing unit number.

⑦ Repeat steps ③ to ⑤ to change unit number and make function settings on it.

⑧ Complete the function settings
Press button.

* Do not use the wireless remote controller for 30 seconds after completing the function setting.

9-2. FUNCTION SELECTION OF REMOTE CONTROLLER

The setting of the following remote controller functions can be changed using the remote controller function selection mode.
Change the setting when needed.

Item 1	Item 2	Item 3 (Setting content)
1.Change Language ("CHANGE LANGUAGE")	Language setting to display	• Display in multiple languages is possible.
2.Function limit ("FUNCTION SELECTION")	(1) Operation function limit setting (operation lock) ("LOCKING FUNCTION")	• Setting the range of operation limit (operation lock)
	(2) Use of automatic mode setting ("SELECT AUTO MODE")	• Setting the use or non-use of "automatic" operation mode
	(3) Temperature range limit setting ("LIMIT TEMP FUNCTION")	• Setting the temperature adjustable range (maximum, minimum)
3.Mode selection ("MODE SELECTION")	(1) Remote controller main/sub setting ("CONTROLLER MAIN/SUB")	• Selecting main or sub remote controller * When two remote controllers are connected to one group, one controller must be set to sub.
	(2) Use of clock setting ("CLOCK")	• Setting the use or non-use of clock function
	(3) Timer function setting ("WEEKLY TIMER")	• Setting the timer type
	(4) Contact number setting for error situation ("CALL.")	• Contact number display in case of error • Setting the telephone number
4.Display change ("DISP MODE SETTING")	(1) Temperature display ℃/°F setting ("TEMP MODE ℃/°F")	• Setting the temperature unit (℃ or °F) to display
	(2) Suction air temperature display setting ("ROOM TEMP DISP SELECT")	• Setting the use or non-use of the display of indoor (suction) air temperature
	(3) Automatic cooling/heating display setting ("AUTO MODE DISP C/H")	• Setting the use or non-use of the display of "Cooling" or "Heating" display during operation with automatic mode

[Function selection flowchart] Refer to next page.
[1] Stop the air conditioner to start remote controller function selection mode. ➔ [2] Select from item1. ➔ [3] Select from item2. ➔ [4] Make the setting. (Details are specified in item3) ➔ [5] Setting completed. ➔ [6] Change the display to the normal one. (End)

[Detailed setting]

[4] -1. CHANGE LANGUAGE setting

The language that appears on the dot display can be selected.
- Press the [◴MENU] button to change the language.

① Japanese (JP), ②English (GB), ③German (D), ④Spanish (E), ⑤ Russian (RU), ⑥Italian (I), ⑦Chinese (CH), ⑧French (F)

[4] -2. Function limit

(1) Operation function limit setting (operation lock)
- To switch the setting, press the [◴ON/OFF] button.

① no1 : Operation lock setting is made on all buttons other than the [ⓘON/OFF] button.
② no2 : Operation lock setting is made on all buttons.
③ OFF (Initial setting value) : Operation lock setting is not made

* To make the operation lock setting valid on the normal screen, it is necessary to press buttons (Press and hold down the [FILTER] and [ⓘ ON/OFF] buttons at the same time for two seconds.) on the normal screen after the above setting is made.

(2) Use of automatic mode setting

When the remote controller is connected to the unit that has automatic operation mode, the following settings can be made.
- To switch the setting, press the [◴ON/OFF] button.

① ON (Initial setting value) : The automatic mode is displayed when the operation mode is selected.
② OFF : The automatic mode is not display when the operation mode is selected.

(3) Temperature range limit setting

After this setting is made, the temperature can be changed within the set range.
- To switch the setting, press the [◴ ON/OFF] button.

① LIMIT TEMP COOL MODE :
The temperature range can be changed on cooling/dry mode.
② LIMIT TEMP HEAT MODE :
The temperature range can be changed on heating mode.
③ LIMIT TEMP AUTO MODE :
The temperature range can be changed on automatic mode.
④ OFF (initial setting) : The temperature range limit is not active.

* When the setting, other than OFF, is made, the temperature range limit setting on cooling, heating and automatic mode is made at the same time. However the range cannot be limited when the set temperature range has not changed.
- To increase or decrease the temperature, press the [TEMP (▽) or (△)] button.
- To switch the upper limit setting and the lower limit setting, press the [ ] button. The selected setting will flash and the temperature can be set.
- Settable range
  Cooling/Dry mode : Lower limit: 19 ℃ ~ 30℃ Upper limit: 30 ℃ ~ 19℃
  Heating mode : Lower limit: 17 ℃ ~ 28℃ Upper limit: 28 ℃ ~ 17℃
  Automatic mode : Lower limit: 19 ℃ ~ 28℃ Upper limit: 28 ℃ ~ 19℃

[4] -3. Mode selection setting

(1) Remote controller main/sub setting
- To switch the setting, press the [◴ON/OFF] button.

① Main : The controller will be the main controller.
② Sub : The controller will be the sub controller.

(2) Use of clock setting
- To switch the setting, press the [◴ON/OFF] button.

① ON : The clock function can be used.
② OFF : The clock function cannot be used.

(3) Timer function setting
- To switch the setting, press the [◴ON/OFF] button (Choose one of the followings.).

① WEEKLY TIMER (initial setting on MA deluxe):
The weekly timer can be used.
② AUTO OFF TIMER: The auto off timer can be used.
③ SIMPLE TIMER (Default setting on MA smooth):
The simple timer can be used.
④ TIMER MODE OFF: The timer mode cannot be used.

* When the use of clock setting is OFF, the "WEEKLY TIMER" cannot be used.

(4) Contact number setting for error situation
- To switch the setting, press the [◴ON/OFF] button.

① CALL OFF : The set contact numbers are not displayed in case of error.
② CALL **** *** **** : The set contact numbers are displayed in case of error.
CALL_ : The contact number can be set when the display is as shown on the left.
- Setting the contact numbers

To set the contact numbers, follow the following procedures.
Move the flashing cursor to set numbers. Press the [TEMP. (▽) and (△)] button to move the cursor to the right (left). Press the [◴CLOCK (▽) and (△)] button to set the numbers.

[4] -4. Display change setting

(1) Temperature display ℃/ °F setting
- To switch the setting, press the [◴ ON/OFF] button.

①℃ : The temperature unit ℃ is used.
② °F: The temperature unit ℉ is used.

(2) Suction air temperature display setting
- To switch the setting, press the [◴ON/OFF] button.

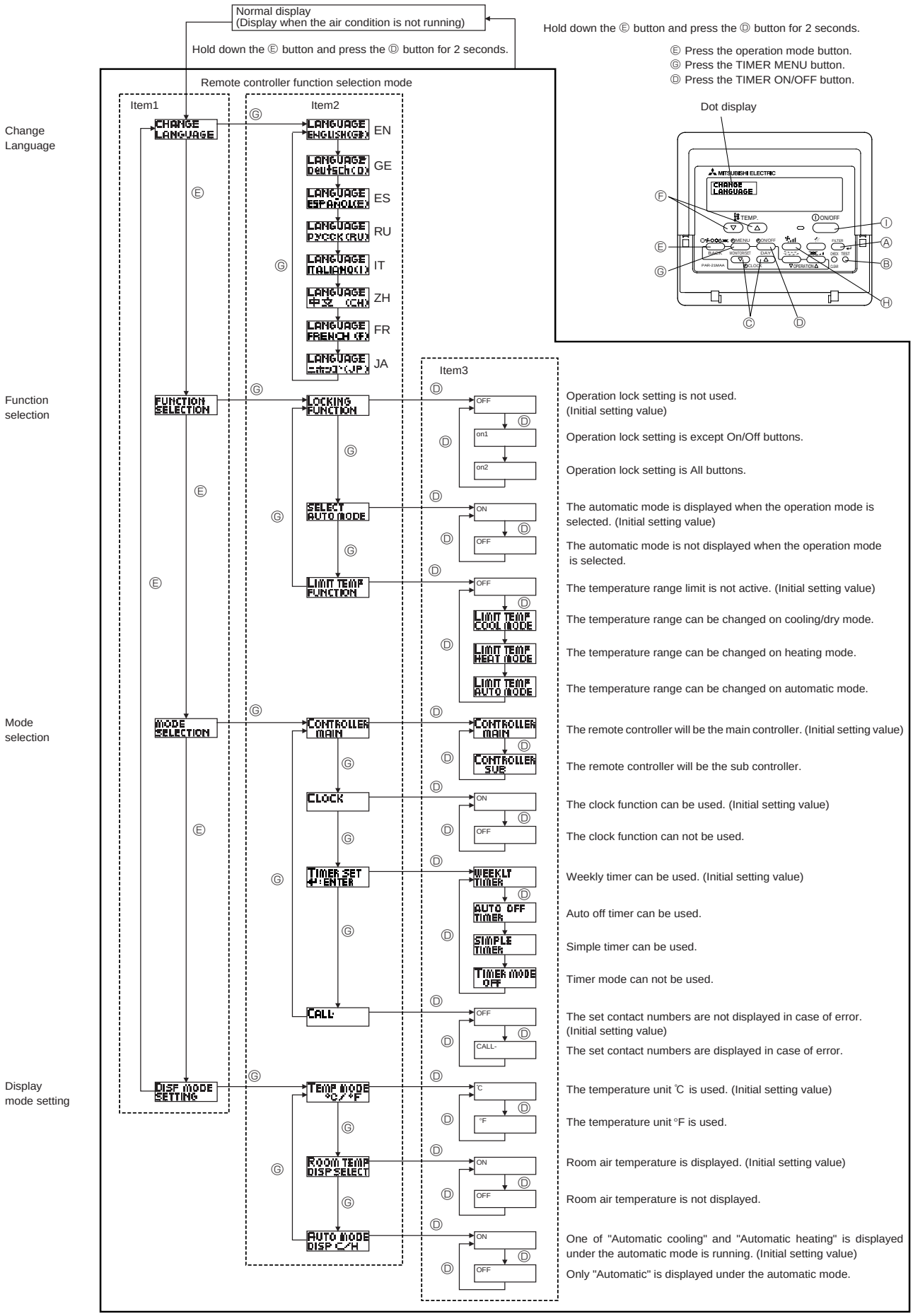
① ON : The suction air temperature is displayed.
② OFF : The suction air temperature is not displayed.

(3) Automatic cooling/heating display setting
- To switch the setting, press the [◴ON/OFF] button.

① ON : One of "Automatic cooling" and "Automatic heating" is displayed under the automatic mode is running.
② OFF : Only "Automatic" is displayed under the automatic mode.

Flowchart of Function Setting

Setting language (English)


Normal display
(Display when the air condition is not running)
Hold down the Ⓔ button and press the Ⓓ button for 2 seconds.
Hold down the Ⓔ button and press the Ⓓ button for 2 seconds.
Ⓔ Press the operation mode button.
Ⓖ Press the TIMER MENU button.
Ⓓ Press the TIMER ON/OFF button.
Remote controller function selection mode
Item1
Item2
Item3
Dot display
Change Language
Function selection
Mode selection
Display mode setting
CHANGE LANGUAGE
LANGUAGE ENGLISH(GB) EN
LANGUAGE Deutsch(DE) GE
LANGUAGE ESPAÑOL(ES) ES
LANGUAGE РУССКИЙ(RU) RU
LANGUAGE ITALIANO(IT) IT
LANGUAGE 中文 (CH) ZH
LANGUAGE FRENCH (FR) FR
LANGUAGE 日本語(JP) JA
FUNCTION SELECTION
LOCKING FUNCTION
OFF
on1
on2
Operation lock setting is not used. (Initial setting value)
Operation lock setting is except On/Off buttons.
Operation lock setting is All buttons.
SELECT AUTO MODE
ON
OFF
The automatic mode is displayed when the operation mode is selected. (Initial setting value)
The automatic mode is not displayed when the operation mode is selected.
LIMIT TEMP FUNCTION
LIMIT TEMP COOL MODE
LIMIT TEMP HEAT MODE
LIMIT TEMP AUTO MODE
The temperature range limit is not active. (Initial setting value)
The temperature range can be changed on cooling/dry mode.
The temperature range can be changed on heating mode.
The temperature range can be changed on automatic mode.
MODE SELECTION
CONTROLLER MAIN
CONTROLLER SUB
The remote controller will be the main controller. (Initial setting value)
The remote controller will be the sub controller.
CLOCK
The clock function can be used. (Initial setting value)
The clock function can not be used.
TIMER SET ↵:ENTER
WEEKLY TIMER
AUTO OFF TIMER
SIMPLE TIMER
TIMER MODE OFF
Weekly timer can be used. (Initial setting value)
Auto off timer can be used.
Simple timer can be used.
Timer mode can not be used.
CALL
CALL-
The set contact numbers are not displayed in case of error. (Initial setting value)
The set contact numbers are displayed in case of error.
DISP MODE SETTING
TEMP MODE °C/°F
°C
°F
The temperature unit ℃ is used. (Initial setting value)
The temperature unit °F is used.
ROOM TEMP DISP SELECT
Room air temperature is displayed. (Initial setting value)
Room air temperature is not displayed.
AUTO MODE DISP C/H
One of "Automatic cooling" and "Automatic heating" is displayed under the automatic mode is running. (Initial setting value)
Only "Automatic" is displayed under the automatic mode.

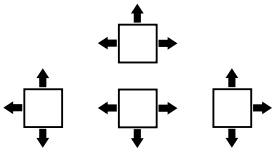
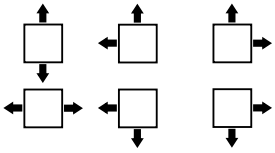
10 4-WAY AIR FLOW SYSTEM

1. Placement of the air outlets

• For this grille, the blowout direction comes in 11 patterns.
Also,by unit function setting by the remote controller, you can adjust the air flow and speed. Select the settings from Table according to the location in which you want to install the unit.

1) Decide on the pattern of the airflow direction.

<Table 1>

Blowout direction pattern	4-direction	3-direction	2-direction
	Pattern 1 Factory setting	Pattern 4 One air outlet fully closed	Pattern 6 Two air outlet fully closed
			

Note1.
For 3 and 2-directional, please use the air outlet shutter plate (option).

2) According to the number of air outlets and height of the ceiling to install the unit, be sure to set the unit function setting by the remote controller.
Correspondence of ceiling heights to numbers of air outlets.

Ceiling height & discharge direction

(Unit : m)

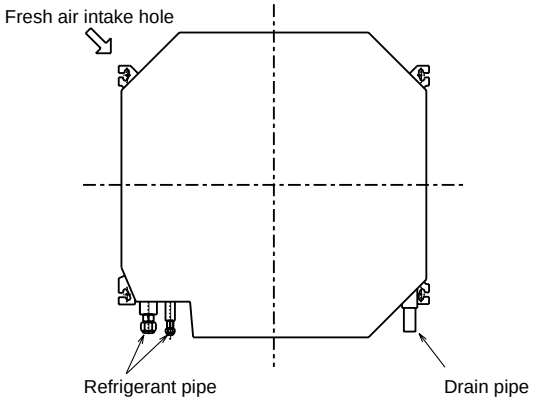
PLH-3AAK(H)	Standard	High ceiling ①	High ceiling ②
4 direction	2.7m	3.0m	3.5m
3 direction	3.0m	3.3m	3.5m
2 direction	3.3m	3.5m	—

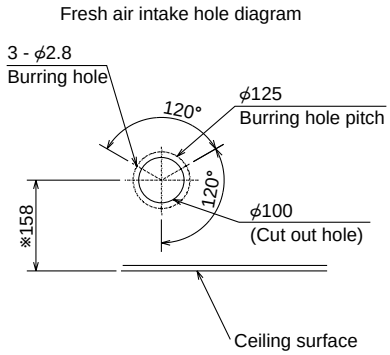
PLH-4, 5, 6AAK(H)	Standard	High ceiling ①	High ceiling ②
4 direction	3.2m	3.6m	4.2m
3 direction	3.6m	4.0m	4.2m
2 direction	4.0m	4.2m	—

2. Fresh air intake (Installation of site)

• At the time of installation, use the duct holes (cut out) located at the positions shown in following diagram, as and when required.

Note :
Be sure to add135mm to the dimensions in the diagram that are marked with a "※" if installing a multi function casement (Option)

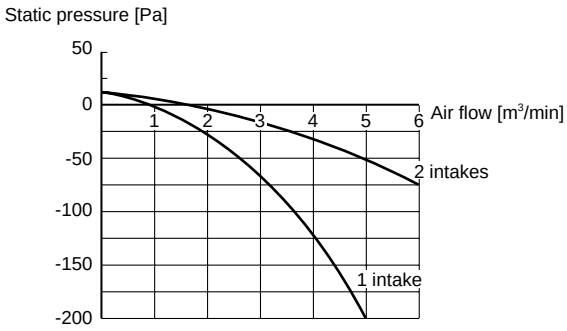




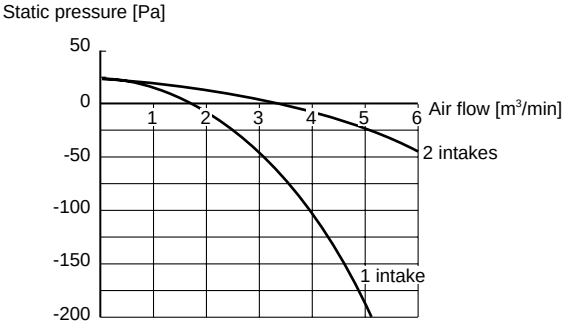
3. Fresh air intake amount & static pressure characteristics

① PLH-3AAK(H)

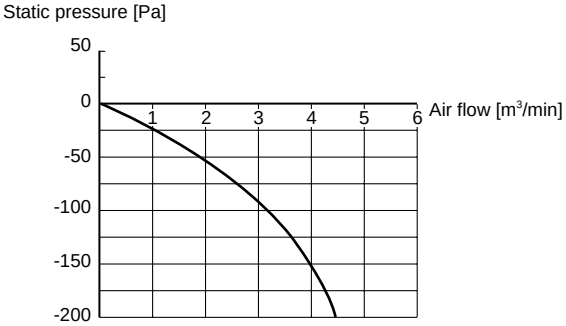
Multifunction casement + Standard filter



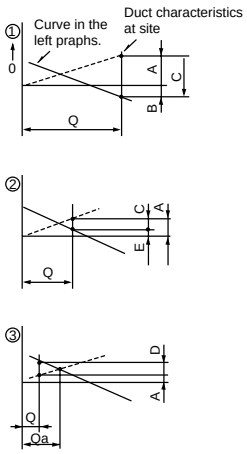
Multifunction casement + High efficiency filter



Taking air into the unit



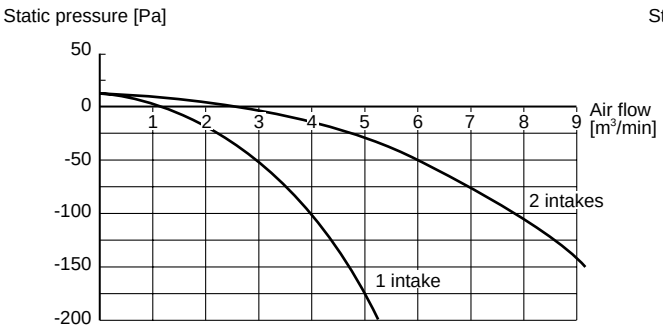
How to read curves



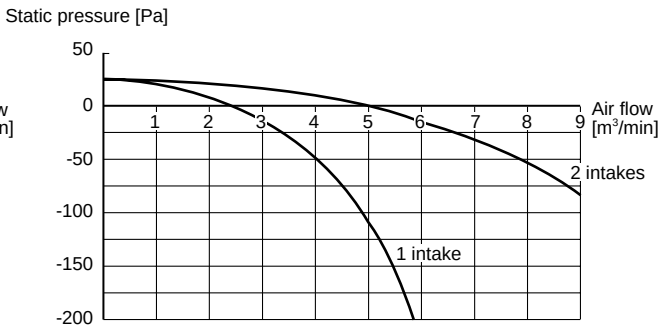
Q…Planned amount of fresh air intake <m³/mim>
A…Static pressure loss of fresh air intake duct system with air flow amount Q <Pa>
B…Forced static pressure at air conditioner inlet with air flow amount Q <Pa>
C…Static pressure of booster fan with air flow amount Q <Pa>
D…Static pressure loss increase amount of fresh air intake dust system for air flow amount Q <Pa>
E…Static pressure of indoor unit with air flow amount Q <Pa>
Qa…Estimated amount of fresh air intake with out D <m³/min>

② PLH-4 · 5 · 6AAK(H)

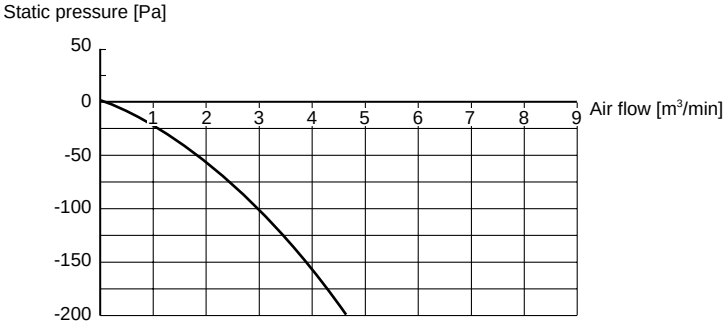
Multifunction casement + Standard filter



Multifunction casement + High efficiency filter



Taking air into the unit



4. Interlocking operation method with duct fan (Booster fan)

●Whenever the indoor unit is operating, the duct fan also operates.

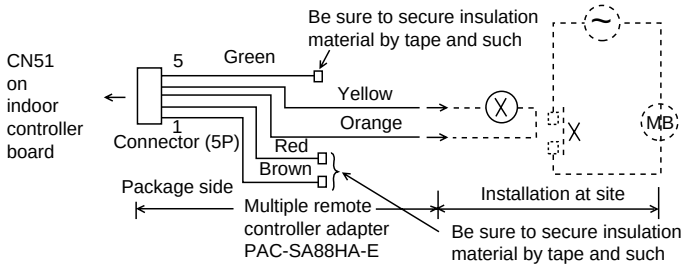
(1)Connect the optional multiple remote controller adapter(PAC-SA88HA-E)to the connector CN51 on the indoor controller board.

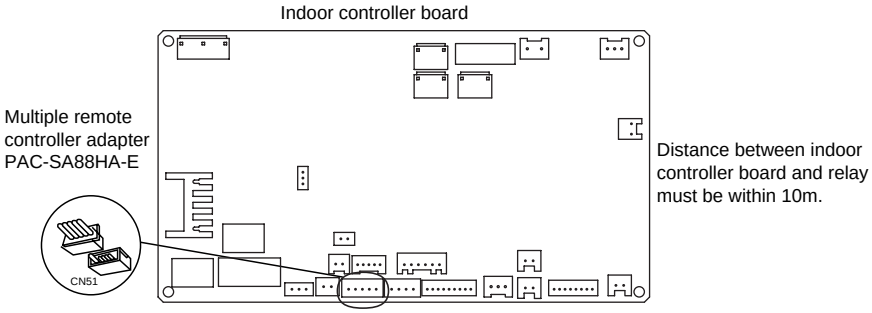
(2)Drive the relay after connecting the 12V DC relay between the Yellow and Orange connector lines.

(※)Use a relay under 1W.

MB: Electromagnetic switch power relay for duct fan.

X: Auxiliary relay (12V DC LY-1F)




Indoor controller board
Multiple remote controller adapter PAC-SA88HA-E
CN51
Distance between indoor controller board and relay must be within 10m.

5. BRANCH DUCT(Installation at site)

Discharge by branch duct becomes possible by installing a branch duce at site. Knockout holes on the wall panel of the indoor unit must be removed.

5-1 Branch Duct Installation Procedure

At the time of installation, use the duct holes (cut out) located at the positions shown in following diagram, as and when required.

Note :

The figure marked with ※ in the drawing represent the dimensions of the main unit excluding those of the optional multi function casement.

When installing the optional multi function casement, add 135 mm to the dimensions marked on the figure.

When installing the branch ducts, be sure to insulate adequately. Otherwise condensation and dripping may occur.

Fig 1. Branch duct mounting position

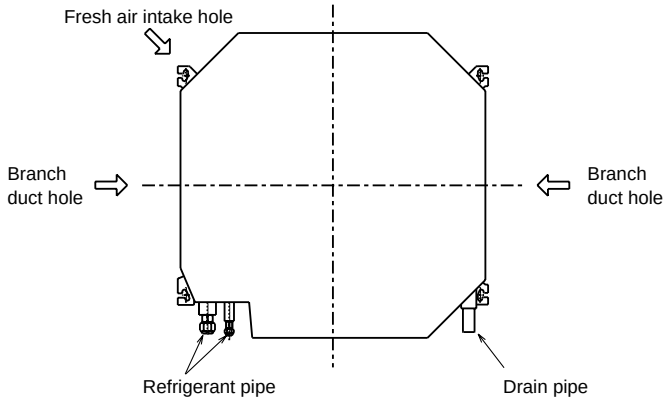
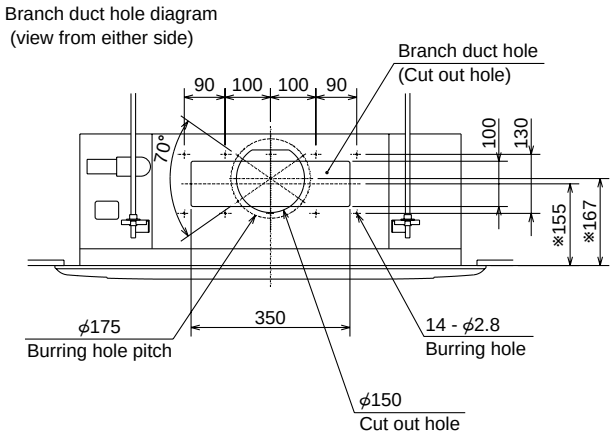


Fig 2. Branch duct connection details

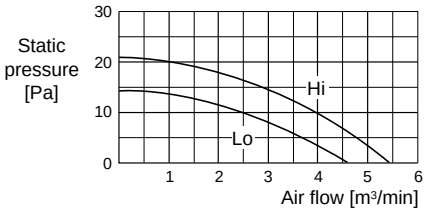


6. Air flow & Static pressure characteristics of Branch Duct (Air flow(Fan speed) at “Standard”)

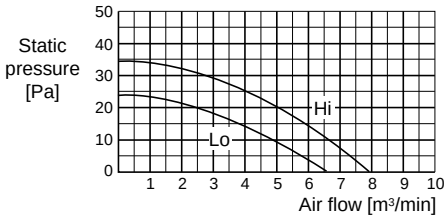
4 direction airflow (Horizontal vane)

Angled duct

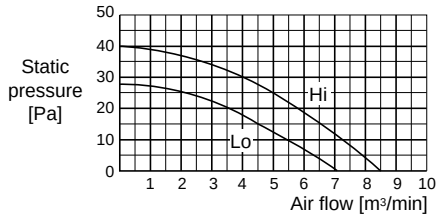
PLH-3AAK(H)



PLH-4AAK(H)

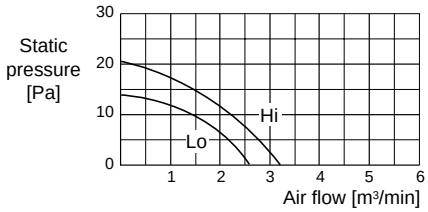


APLH-5, 6AAK(H)

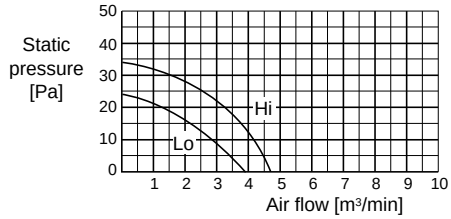


Rounded duct

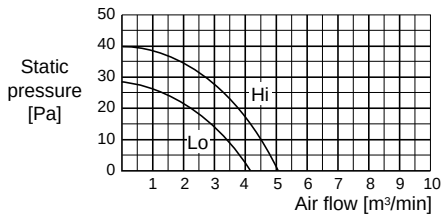
PLH-3AAK(H)



PLH-4AAK(H)



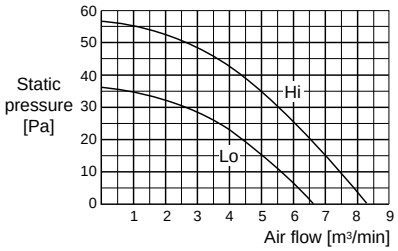
PLH-5, 6AAK(H)



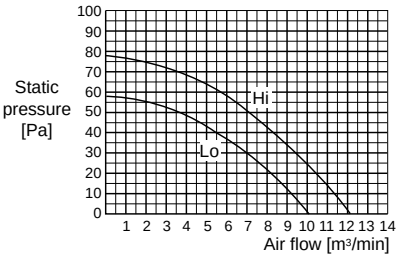
3 direction airflow (Horizontal vane)

Angled duct

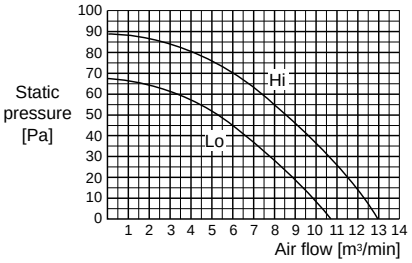
PLH-3AAK(H)



PLH-4AAK(H)

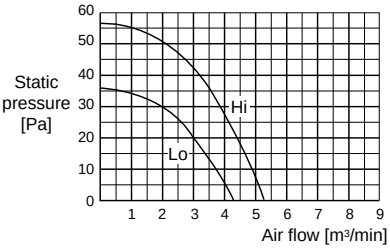


PLH-5, 6AAK(H)

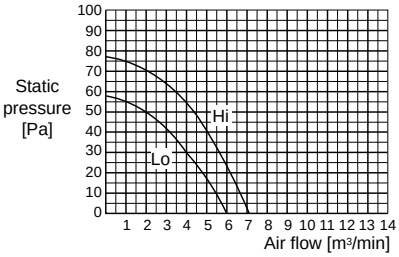


Rounded duct

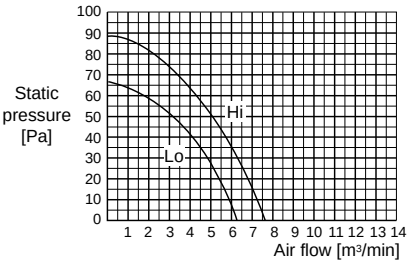
PLH-3AAK(H)



PLH-4AAK(H)



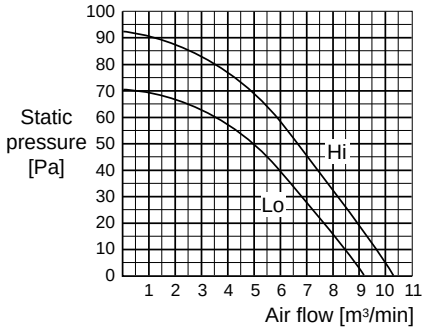
PLH-5, 6AAK(H)



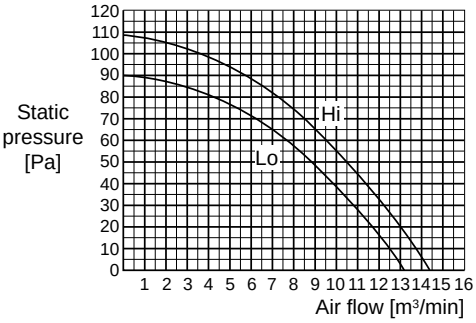
2 direction airflow (Horizontal vane)

Angled duct

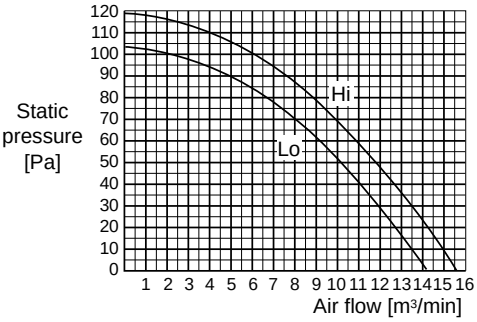
PLH-3AAK(H)



PLH-4AAK(H)

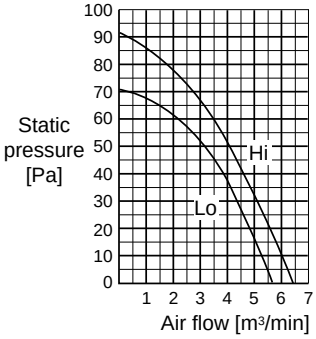


PLH-5, 6AAK(H)

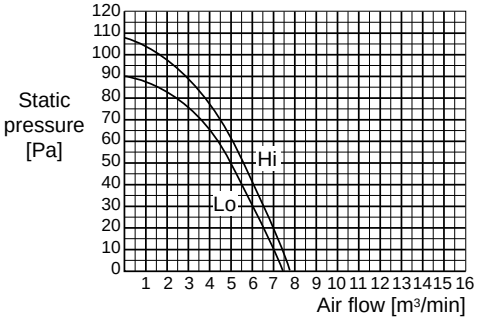


Rounded duct

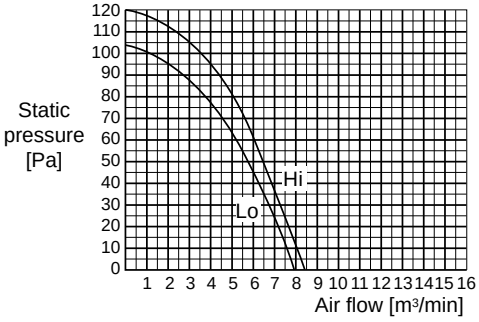
PLH-3AAK(H)



PLH-4AAK(H)

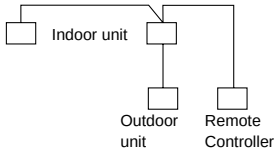
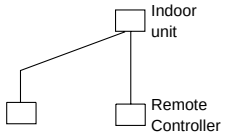
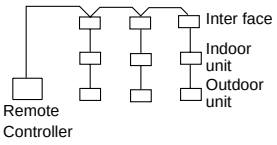
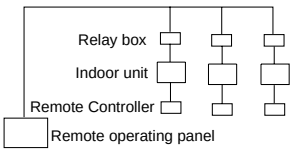
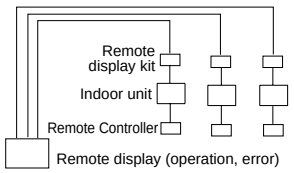


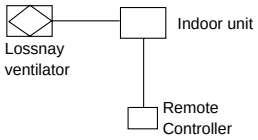
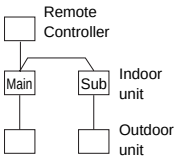
PLH-5, 6AAK(H)



11 SYSTEM CONTROL

11-1. VARIETY OF SYSTEM CONTROL FUNCTIONS

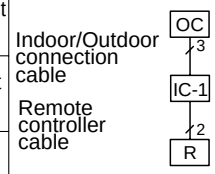
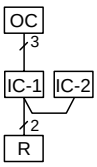
System Name	System Diagram	Features	Parts Required in Addition to Standard System Components (Indoor/Outdoor Units, Remote Controller)
A. Remote controller operation (Standard)		• There are two types of remote controllers: wired type and wireless type. • Simultaneous twin indoor units are started or stopped simultaneously.	———
B. Remote controller operation Use of two controllers enables operation of the air conditioner both from a distance and nearby.	 * One of the wired remote controllers must be set as a sub remote controller.	• Up to two remote controllers can be connected to one group. • Simultaneous twin units are counted as each unit. • Operation control by the latest command (last entered priority) • Wired and wireless remote controllers can be combined as a pair.	Wired remote controller (additional) (PAR-21MAA) For models PK(H)-GAKL(H)/ FAKL(H), use remote controller (PAR-21MAAT-E). * For models equipped with a terminal block.
C. Group control operation Uses one remote controller to control multiple air conditioners with the same settings simultaneously.		• One group can consist of up to 16 indoor units, and they can be started sequentially by connecting the remote controller to them and assigning an address to each inter face. • Simultaneous twin units are counted as one unit. • All the units belonging to the same group are operated in the same mode, but thermostats can be turned ON/OFF individually for each indoor unit. • Up to two remote controllers can be connected.	Inter face MAC-397IF-E
D. Remote/handheld combined control operation Allows start/stop of the air conditioner from a distance, and prohibits/permits start/stop from remote controllers.		• All the air conditioners can be turned ON/OFF collectively from a distance. • Operation can be switched between the remote operating panel and handheld controller. • Operations (e.g., temperature adjustment, airflow, airflow direction) except for start/stop operations can be performed even if the remote controller is being operated. • In the case of simultaneous twin, triple and quad units, connect the controller to one indoor unit only. If connected to two or more indoor units, an error (operation stop) may occur. • Control by an external timer is possible by connecting it.	Remote ON/OFF adapter (PAC-SE55RA-E) Relay box (Installation required) Remote operating panel (Installation required)
E. Operation by external signal	———	• Use of optional "remote operation adapter" enables remote control via relay. (Level signal)	Remote ON/OFF adapter (PAC–SE55RA-E)
F. Control and remote display by external signal (extraction of monitor signal) Enables you to display the operation state and control start/stop from a distance.		Extraction of non-voltage contact output • Use of optional "remote operation adapter" and "remote display panel" (installation required) provides non-voltage contact outputs of signals (operation, error) and operation/stop input function.	A-control operation display kit (PAC-SF40RM-E) Remote display panel (Installation required)
		Extraction of DC12 V contact output • Use of optional "remote display adapter" and "remote display panel" (installation required) provides DC12 V contact outputs of signals (operation, error) and operation/stop input function.	Remote display adapter (PAC-SA88HA) Remote display panel (Installation required)

System Name	System Diagram	Features	Parts Required in Addition to Standard System Components (Indoor/Outdoor Units, Remote Controller)
G. Timer operation [Enables control of start and stop.] * For control by external timer, refer to Remote/ handheld combined control operation".	———	• Weekly timer: In addition to ON/OFF, up to eight temperature patterns can be set for each day of the week. * Only one timer can be selected; the auto off, simple and weekly timers cannot be combined. • Simple timer: Start and stop operations can each be performed once within 72 hours (can be set in 1-hour increments). • Auto off timer: Operation is stopped when the preset time elapses following the start of operation. The time can be set from 30 minutes to 4 hours in 30-minute increments. * Only one timer can be selected; the simple and auto off timers cannot be combined.	MA Remote controller (PAR-21MAA)
H.Interlock operation with peripheral equipment [Enables control of Mitsubishi Lossnay ventilator by remote controller.]		• Connecting a Lossnay ventilator and an indoor unit enables control of interlock/solo ventilation operation and airflow. (Only the microcomputer type Lossnay ventilator can be used.)	
I.Rotation		• When abnormality occurs while operating, it changes into operating the back up unit, and operating is continued. (Unit function Mode No. 20 setting No.3 , Indoor controller board SW-5-4 ON) Main / Sub setting Main : Indoor controller board SW5-3 : OFF Sub : Indoor controller board SW5-3 : ON • Each system operates alternately for 24 hours or 168 hours. (Unit function Mode No. 20 setting No.1: 24 hours/No.2 : 168 hours, Indoor controller board SW 5-4 ON) Main / Sub setting Main : Indoor controller board SW5-3 : OFF Sub : Indoor controller board SW5-3 : ON	This system can correspond only by the pattern of two refrigerant group by 1 : 1 (indoor and outdoor unit combination) systems.

11-2. ONE REMOTE CONTROLLER (STANDARD) OPERATION

(1) One Wired Remote Controller

(OC: Outdoor unit IC: Indoor unit R: Remote controller (for wireless type: optical receiver adapter)

Slim Air Conditioners System		Standard 1:1	Simultaneous Twin
Remote controller connection circuit (Controller cable)	Outdoor unit OC Indoor unit IC Wired remote controller R		

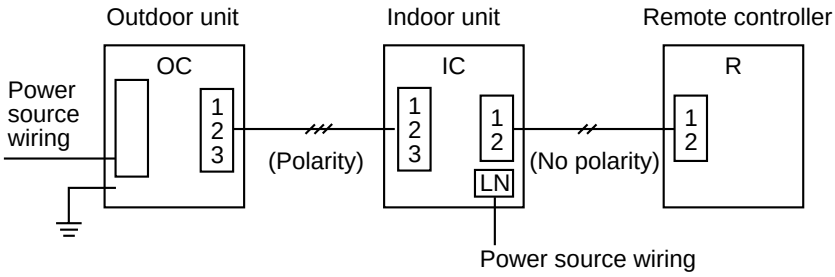
Indoor controller board switch setting

SW5-3	Indoor unit IC
OFF	IC-1 (Main)
ON	IC-2 (Sub)

(Reference)

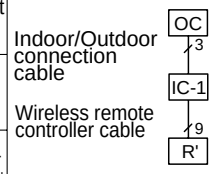
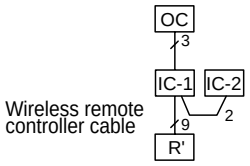
① If simultaneous twin connect the remote controller to indoor units. Can control all functions of the indoor unit even if different models (different types) are mixed. Note that there may be some restrictions of the functions.

② Electrical wiring diagram



- Power supply terminal block L, N
- Indoor/outdoor connection cable terminal block 1,2 (Polarity)
- Remote controller cable terminal block 1,2 (No polarity)

(2) Wireless remote controller

Slim Air Conditioners System		Standard 1:1	Simultaneous Twin
Remote controller optical receiver section connection circuit	Outdoor unit OC Indoor unit IC Wireless remote controller receiver section R'		

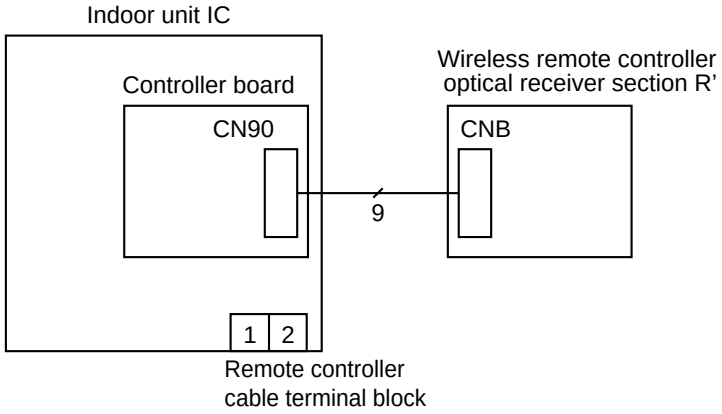
Indoor controller board switch setting

SW5-3	Indoor unit IC
OFF	IC-1 (Main)
ON	IC-2 (Sub)

(Reference)

① If simultaneous twin connect the remote controller to indoor units. Can control all functions of the indoor unit even if different models (different types) are mixed. Note that there may be some restrictions of the functions.

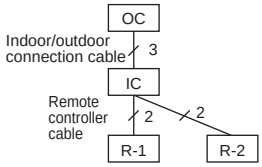
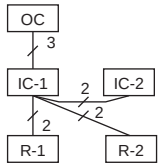
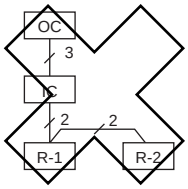
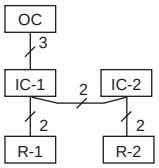
② Electrical wiring diagram



11-3. TWO-REMOTE CONTROLLER OPERATION

(1) Two Wired Remote Controllers

(R: Wired remote controller)

Slim Air Conditioner System		Standard 1:1	Simultaneous Twin
Remote controller connection circuit (Controller cable)	Outdoor unit OC Indoor unit IC Wired remote controller R		
	Outdoor unit OC Indoor unit IC Wired remote controller R		

Indoor controller board switch setting

SW5-3	Indoor unit IC
OFF	IC-1 (Main)
ON	IC-2 (Sub)

[Reference]

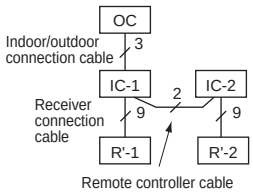
① In the case of free component multi type systems consisting of simultaneous twin units, connect the remote controllers to each indoor unit. All the functions of the connected indoor units can be controlled even if the system consists of different models. However, some function may be restricted.

② In the case of free component multi type systems consisting of simultaneous twin units, the indoor units should be connected by crossover wiring

③ Set one of the remote controllers as the main controller (factory setting) and the other as the sub controller using the remote controller's function selection.

(2) Two Wireless Remote Controllers

(R': Wireless remote controller receiver)

Slim Air Conditioner System		Standard 1:1	Simultaneous Twin
Remote controller receiver connection circuit	Outdoor unit OC Indoor unit IC Wireless remote controller receiver section R'	—	

Indoor controller board switch setting

SW5-3	Indoor unit IC
OFF	IC-1 (Main)
ON	IC-2 (Sub)

* Numbers given in ( ) apply when power is supplied to the indoor and outdoor units separately.

[Reference]

① In the case of free component multi type systems consisting of simultaneous twin units, connect two wireless remote controller receivers (one each) to any two of the indoor units. All the functions of the connected indoor units can be controlled even if the system consists of differer models. However, some functions may be restricted.

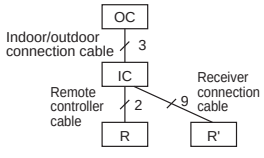
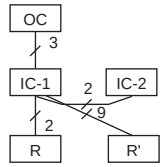
② In the case of free component multi type systems consisting of simultaneous twin units, the indoor units should be connected by crossover wiring

③ In the case of "standard 1:1" connection, it is not possible to connect two remote controller receivers to the indoor units. However, with syster consisting of simultaneous twin units, it is possible to connect a remote controller receiver to two indoor units. In this case, all the pair numbe will be "0" (factory setting, no change necessary), and all the units will be turned ON/OFF simultaneously.

④ When using two or more wireless remote controllers, the display contents on the remote controllers may differ from the actual settings, since the operation made last by any of the remote controllers will be effective.

(3) One Wired and One Wireless Remote Controller

(R: Wired remote controller, R': Wireless remote controller receiver)

Slim Air Conditioner System		Standard 1:1	Simultaneous Twin
Remote controller receiver connection circuit	Outdoor unit OC Indoor unit IC •Wired remote controller R •Receiver R'		

Indoor controller board switch setting

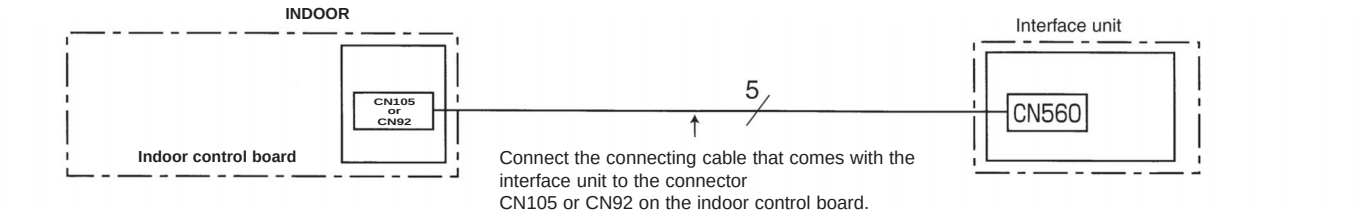
SW5-3	Indoor unit IC
OFF	IC-1 (Main)
ON	IC-2 (Sub)

11-4. GROUP CONTROL OPERATION
(COLLECTIVE OPERATION AND CONTROL OF MULTIPLE REFRIGERANT SYSTEMS (2 to 16))

- Group control can be operated by using MAC-397IF-E.
- The setting of wired remote controller is subjected to variation according to the function of the indoor unit. (for mode operation, setting temperature, fan step, air direction)
- The display of remote controller and operating the indoor unit might be different.
- Neither the test run nor the function setting can be done by MA remote controller connected with MAC-397IF-E.

1.Connecting the MA& CONTACT TERMINAL Interface to the Indoor Unit

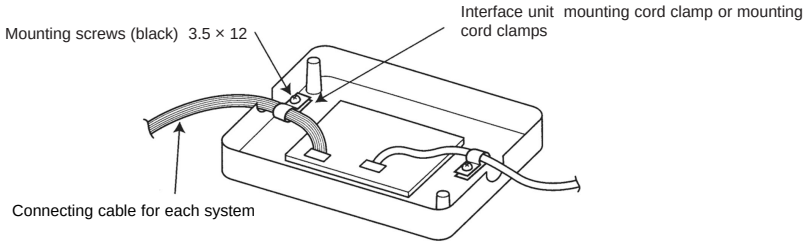
- Connect the interface unit and the indoor control board using the connecting cable that came with the interface.
- Extending or shortening the connecting cable that comes out of the interface may cause it to malfunction. Also, keep the connecting cable as far as possible away from the electrical wires and ground wire. Do not bundle them together.


INDOOR
CN105 or CN92
Indoor control board
5
Interface unit
CN560
Connect the connecting cable that comes with the interface unit to the connector CN105 or CN92 on the indoor control board.

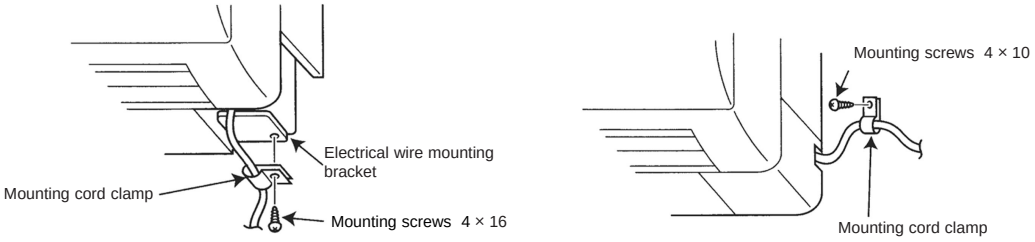
2.Connecting the remote control interface with each system

(For details on each system, see the relevant instruction manual.)

- Replace the interface unit mounting cord clamp with a supplied mounting cord clamp based on the thickness of the connecting cable used for each system.


Mounting screws (black) 3.5 × 12
Interface unit mounting cord clamp or mounting cord clamps
Connecting cable for each system

- The cables connected to the Indoor unit should be mounted on or near the Indoor unit. If the connecting cable is not securely mounted, the connector may detach, break, or malfunction.



- Set the interface dip switch (SW500–502) settings before turning on the power.
- If the interface dip switch (SW500–502) settings are not set correctly, the system will not function properly.

Use as a Wired Remote Control (Using the MA Remote Controller)

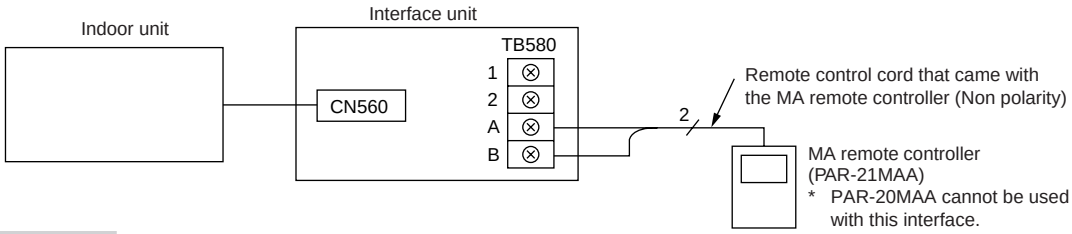
Note:

1. Be sure the Auto Heating/Cooling Display Setting on the MA remote controller is set to OFF before use.
- **For information on how to set the Auto/Heating Cooling Display Setting, see the MA remote controller instruction manual.**
- **The actual operating status of the unit may differ from what is shown on the remote controller display**

2. A test run cannot be initiated using the test run switch on the MA remote controller.

3. The horizontal vanes on the unit cannot be operated using the louver switch.

4. The range of room temperature indication is between 10℃ and 38℃.



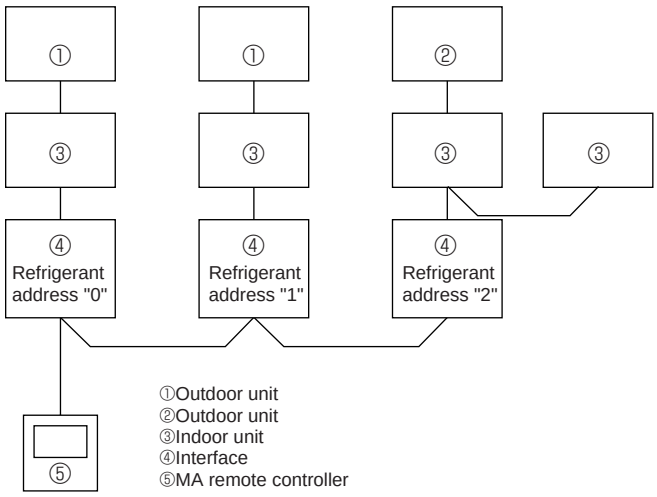
Dip switch settings

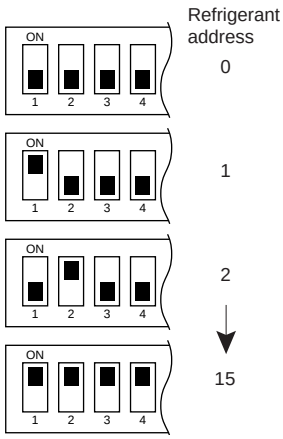
SW500 does not have to be set.

SW501:

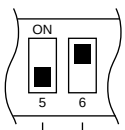
SW501- No. 1-4: Refrigerant address

- Set this switch when multiple indoor units (and remote control interfaces) are connected to a single MA remote controller.
- Always start the refrigerant address at "0".
  Even when connecting multiple outdoor units, set a different refrigerant address for each indoor unit.





SW501- No. 5–6

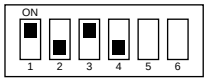
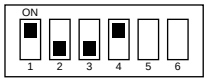
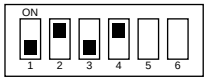
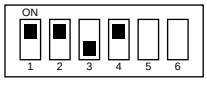
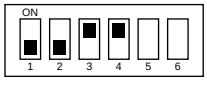
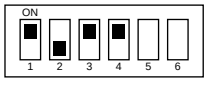
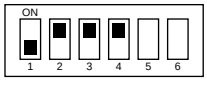
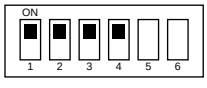


No. 5 should normally be set to OFF.
Under the following conditions, No.6 should normally be set to ON.

When the model of Mr. SLIM exists in the same group, it sets it to turning ON.

Set them to ON only when using the room temperature sensor installed in the MA remote controller.
* This can be switched when an accurate room temperature cannot be detected by the air conditioner unit.
PLH-AAK(H) series do not have a room temperature sensor on their MA remote controllers.

SW501: Settings to accommodate MA remote controller and settings to accommodate outdoor units

SW No.	Functions	OFF	ON	Comments
No. 1 No. 2 No. 3 No. 4	Refrigerant address 0 Refrigerant address 1 Refrigerant address 2 Refrigerant address 3 Refrigerant address 4  Refrigerant address 5 Refrigerant address 6 Refrigerant address 7 Refrigerant address 8  Refrigerant address 9  Refrigerant address 10  Refrigerant address 11  Refrigerant address 12  Refrigerant address 13  Refrigerant address 14  Refrigerant address 15			Only specify these settings when connecting an MA remote controller.

SW No.	Functions	OFF	ON	Comments
No. 5	Room temperature detector	Indoor unit	Remote control	This should normally be set to OFF.
No. 6	The model of Mr. SLIM exists in the same group.	Not mixed	Mixed	This should normally be set to ON.

SW502 : Air Conditioner Function Settings

SW No.	Functions	OFF	ON	Comments
No. 1	Cooling only type/ Heat pump type	Heat pump type	Cooling only type	Set the mode in accordance with the operation manual for the indoor unit.
No. 2	Auto mode	Not available (setting No.3 disabled)	Available (setting No.3 enabled)	Heat pump type : Set to ON. Cooling only type : Set to OFF.
No. 3		Available (unit)	Available (remote controller)	Set to OFF.
No. 4	Fan speed	4 speeds	3 speeds (2-speed model set ON)	When operating a 2-speed model with the 3-speed setting (ON), the MA remote controller display will indicate 3 fan speeds. The table below shows the displays and the actual outputs at that time.
No. 5	Vane	Available	Not available	The Vane function of either of indoor unit : When the function is provided, it is Available (OFF). When the function is not provided, it is Not available (ON).
No. 6	Swing	Available	Not available	The Swing function of either of indoor unit : When the function is provided, it is Available (OFF). When the function is not provided, it is Not available (ON).
No. 7	Not in use	–	–	Permanently set to OFF.
No. 8	Fan mode	Not available	Available	Set to ON.

No. 4 nested table:

Display	Meaning	Indoor unit output
	Low speed	Low speed
	Medium speed	High speed
	High speed	High speed

* Fan speed 2 step model : An actual fan speed is 2 step though the display of remote controller becomes 4 step or 3 step.

3. Test Run (Check Operations)

Interface status monitor

You can check the status of the interface by the LED lamp on the interface unit board.

LED lamp no.	Lamp off	Lamp on	Blinking
LED521	DC 12 V is not being supplied from the air conditioner.	DC 12 V is being supplied from the air conditioner.	–
LED522	Device is not communicating properly with the air conditioner.	–	Blinking at approx. 1 second intervals: Device is communicating normally with the air conditioner.
LED523	Device is not communicating properly with the MA remote controller.	–	Blinking at approx. 8 second intervals: Device is communicating normally with the MA remote controller.

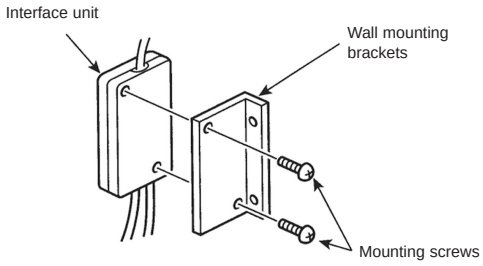
* Use the table above to check the device operations.

4. Mounting the Remote Control Interface Unit

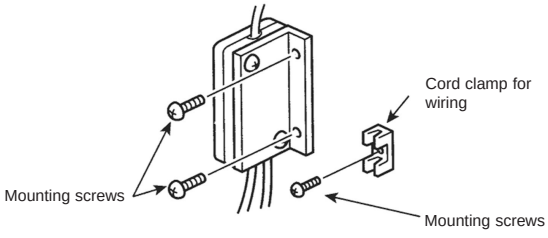
The Interface unit should be placed in a location where the connecting cable from the interface can reach an indoor unit.
The device will not function properly if the connecting cable is extended so the connecting cable should not be extended.
Mount the interface unit securely to a pillar or wall using 2 or more screws.

■ When Using Wall Mounting Brackets

1 Attach the wall mounting brackets to the interface unit using 2 mounting screws.

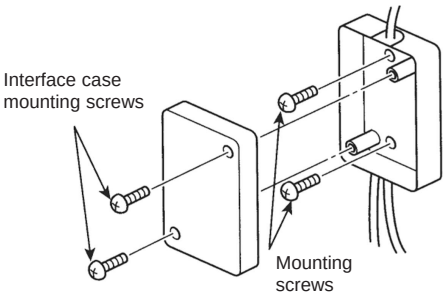


2 Mount the unit to a pillar or wall using 2 mounting screws.

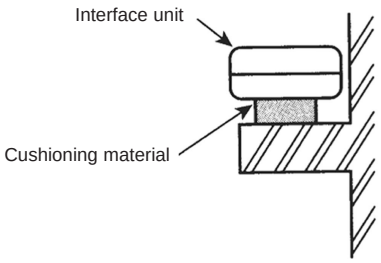


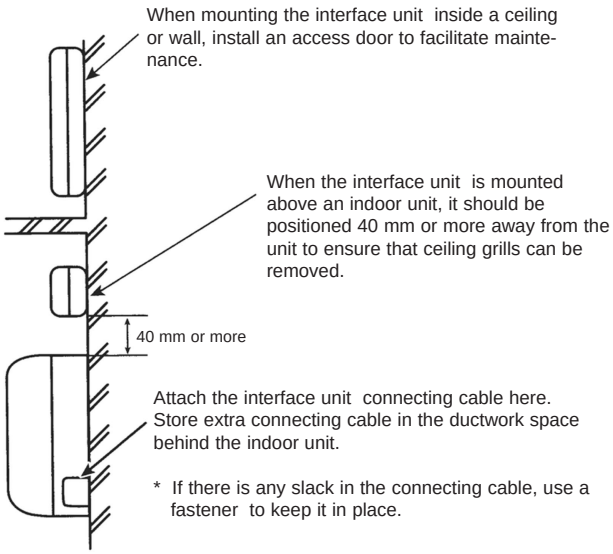
■ When Mounting Directly to a Wall

Mount the interface unit case to the wall using the mounting screws.



* When mounting the interface unit using a cushioning material , be sure to mount it in a location where it will not fall.



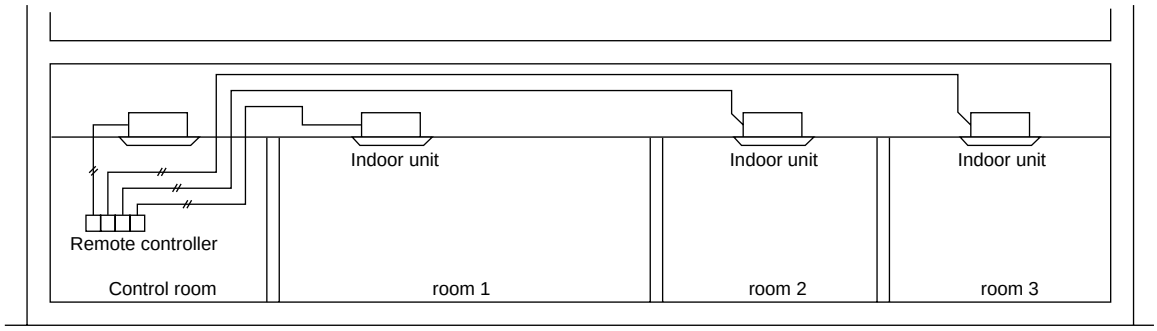

When mounting the interface unit inside a ceiling or wall, install an access door to facilitate maintenance.
When the interface unit is mounted above an indoor unit, it should be positioned 40 mm or more away from the unit to ensure that ceiling grills can be removed.
40 mm or more
Attach the interface unit connecting cable here. Store extra connecting cable in the ductwork space behind the indoor unit.
* If there is any slack in the connecting cable, use a fastener to keep it in place.

11-5. POWER OUTAGE AUTOMATIC RECOVERY OPERATION

- Whenever a power outage or switching of the power supply causes the power supply of an operating air conditioner to go from OFF to ON, this function will automatically restore the operation of the air conditioner to its previous operating mode.
  ※ If the power is turned from OFF to ON when the air conditioner is not in operation, the air conditioner will not automatically be turned on. However, the timer operation will be cancelled if the air conditioner is in timer operation (including when the unit is waiting for its start time). Setting for timer operation must be performed once again.
- If there is a momentary power outage of less than one second while the air conditioner is in operation, there may not be a clear determination of whether or not there was a power failure. When it has been determined that there has been a power failure, recovery will take approximately four minutes after the power is restored. Please wait. (Once "PLEASE WAIT" has appeared on the display, a protection system will operate to prevent the unit from restarting for three minutes.)
  When it has been determined that there has been no power failure, operation will continue as is.
- Settings can be made by function selections from the remote controller.
- When there is group control, selection of all refrigerants is required.

11-6. INDIVIDUAL CONTROL OPERATION FROM A SEPARATE ROOM

- By simply centralizing the remote controllers installed in each room in a separate control room, individual control or centralized monitoring of the air conditioners in each room can be attained.
- Air conditioner control can be performed up to a total of 500 meters away by connecting the indoor units and remote controllers with 0.3 to 1.25 mm^2 2-core cable.



- If a remote controller is installed in a room and control room, refer to the section on operating with two remote controllers.

11-7. COMBINED REMOTE/HAND-HELD CONTROL

- Operation/remote controller prohibit/ stop can be controlled from a remote location by routing the remote stop/start adapter (PAC-SE55RA-E sold separately) through the relay box installed on site. When this remote control is cancelled, the hand-held remote controller can be used for operating and stopping the air conditioner.

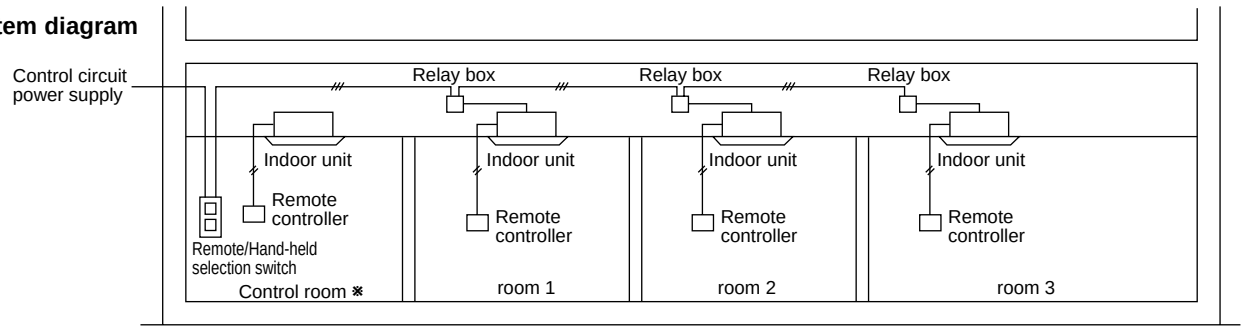
1. Basic system wiring

- Use the remote start/stop adapter (PAC-SE55RA-E) and connect the "Start/Stop Circuit From Remote Location" that comes from the relay box and remote/hand-held selection switch and connect it to the CN32 connector on the printed circuit board for the indoor unit

<Points of precaution>

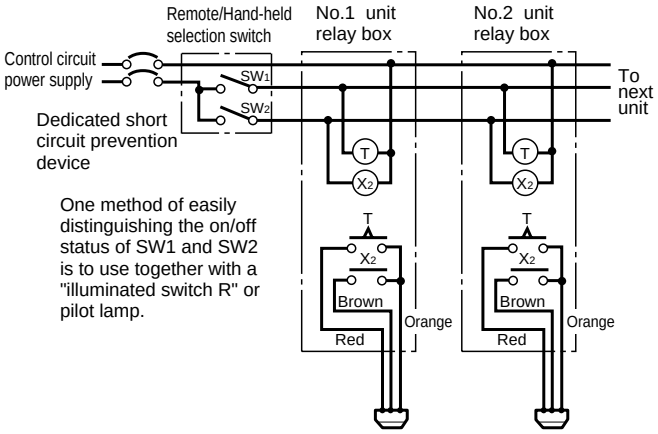
① Match the rated power supply voltage of the remote/hand-held selection switch and relay (X2) with the power supply for the controller.
② When performing group control of multiple outdoor unit using a timer, be sure to arrange the timer so that all units do not start at the same time. If this is not performed, all of the units will start at one time creating an over current that will cause the circuit breaker to operate.
③ An on-delay system is one that includes specifications for operating a limited time when an on signal is received and has a temporary off timer for recovery operations.
④ Use a connecting relay when the wiring length exceeds 10 meters, such as when performing remote wiring. If this is not provided, abnormal operation will occur.

(1). System diagram



※ The AC for the control room is usually disconnected from the remote/hand-held control system.

(2). Basic wiring diagram



Note: When using group address, connect to refrigerant address "0" on the inside.

(3). Part specifications

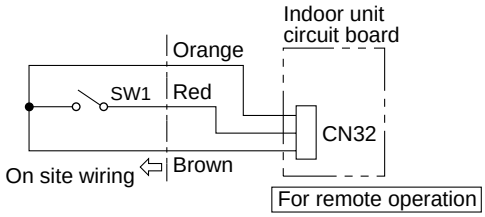
① Remote/Hand-held selection switch	② Adapter for remote start/stop	③ Relay box
(Example) Single polarity single-throw switch (125V rating)	Model PAC-SE55RA-E (Sold separately)	Ⓣ Timer (On delay system) Ⓧ Relay

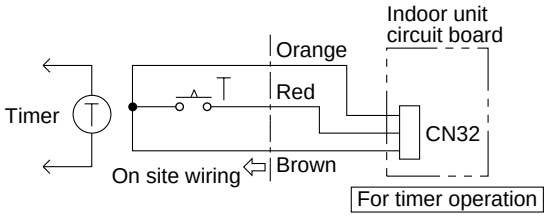
Remote control	SW1	ON		OFF	
Remote/Hand-held selection switch	SW2	ON	OFF	ON	OFF
Description of functions		• Starting/stopping with remote controller disabled. • AC is in operation. • Starting/stopping by remote operation enabled.	• Starting/stopping with remote controller disabled. • Starting/stopping by remote operation enabled.	• Starting/stopping with remote controller disabled. • AC is in operation. • Starting/stopping by remote operation enabled.	• Starting/stopping with remote controller disabled. • Starting/stopping by remote operation enabled.

2. Examples of system applications

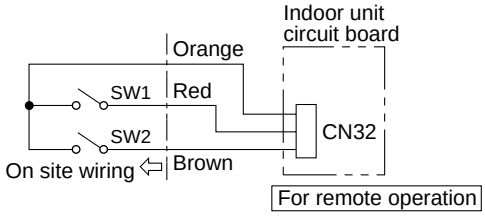
In any of the following examples, there is a five to six second delay from the time the operating command is issued until the operation begins.

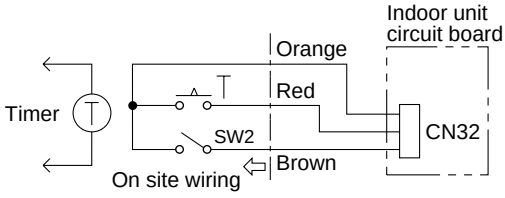
① This is when starting and stopping is performed by remote operation or external timer and when starting and stopping by the remote controller is to be prohibited.



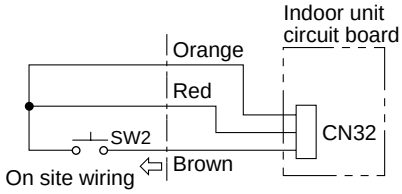


② This is when starting and stopping is performed by remote operation or external timer and when starting and stopping by the remote controller is to be separated.



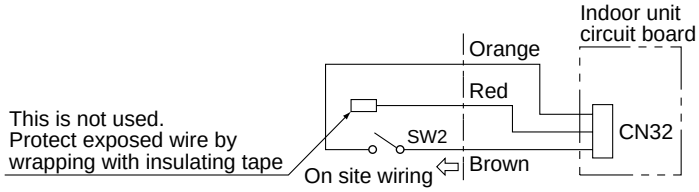


③ This is when starting and stopping is performed by remote operation and then allowing starting or stopping by remote control at any time.



Use momentary switch for SW2. (Manual operation/automatic recover switch on time is more than one second.)
Press SW2 (on time is more than one second) and operation starts. After this has been done, stopping or restarting can be down by remote controller.

④ This is when permitting or prohibiting operation by remote controller is performed by external circuit.

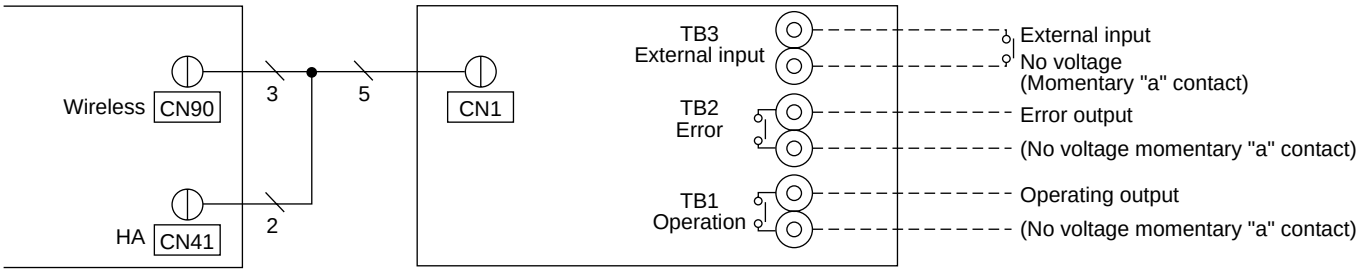


If SW2 is on, operation by remote controller cannot be performed.
If SW2 is off, operation by remote controller is permitted.

11-8. OBTAINING REMOTE DISPLAY

Use the A control operating display kit (PAC-SF40RM-E) to provide operation/error non-voltage contact output and on/off input function.

(1). Wiring method



A control indoor control circuit board

A control operating display kit

⚠Caution	**TB3 is a dedicated terminal for contact point input. Never input voltage. It will damage the indoor control circuit board.**

<Connections on the indoor unit side>

① When using external output function
Insert the 9-prong connector (3-core) of the attached cable to CN90 on the indoor control circuit board.

② When using the external input function
Insert the 4-prong connector (2-core) of the attached cable to CN41 on the indoor control circuit board.

※ The connector is direction-sensitive. Use care not to make an error when inserting.
Never force the connectors. This will result in damage.

(2). Locally procured parts

Item	Name	Model and specifications
External output function	External output signal wire	Use sheathed vinyl coated cord or cable. Wire type: CV, CVS or equivalent. Wire size: Stranded wire 0.5mm² to 1.25mm² Single straged: ϕ0.65mm to 1.25mm
	Display lamp, etc.	No voltage “a” contact AC200V (DC30V), 1A or less
External input function	External input signal wire	Use sheathed vinyl coated cord or cable. Wire type: CV, CVS or equivalent. Wire size: Stranded wire 0.5mm² to 1.25mm² Single straged: ϕ0.65mm to 1.2mm
	Switch	No voltage “a” contact (Start and stop operation is switched by inputting a pulse of 200ms or more)

11-9. TIMER OPERATION

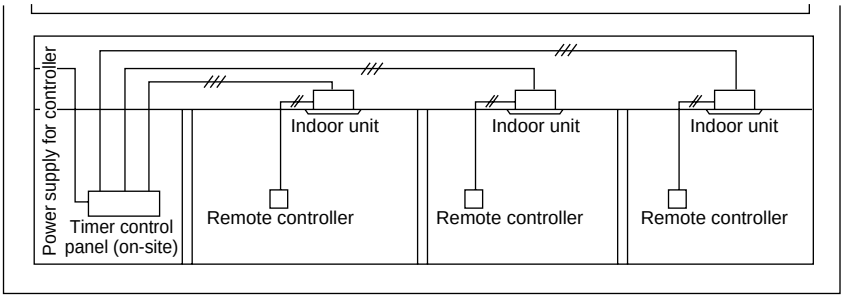
- Timer operation can be performed by setting the wired or wireless remote controller timer. Start and stop times can be set in 10-minute increments within a 24-hour period.
- When used in combination with the central control remote controller of the M-NET control system for the outdoor unit, one program timer can be used for individual timer settings for each group of the central control system. (Each timer setting can be stored in data memory so timer settings for up to 50 groups can be set individually.)

※ Please refer to the MELANS catalog or technical information for details about the central control remote controller.

1.Operating with on-site timer

(1). Summary of system

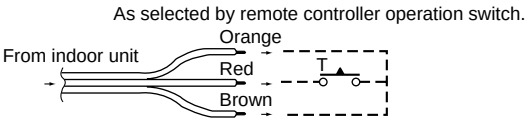
If the “Remote ON/OFF adapter” (PAC-SE55RA-E) (sold separately) is used, the on-site timer can be operated to turn each unit on and off.



(2). Basic pattern for timer control

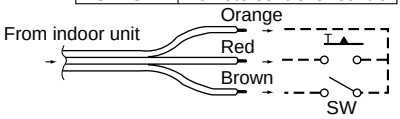
Use a no-voltage contact point output timer (one that has separate circuits for the load side and timer power supply).

a) Timer-independent control



b) Combined control by timer and remote controller

SW ON	Timer control
SW OFF	Remote controller control



(3). Basic system

5-7 Refer to the section on combined control by remote control and hand-held remote controller.

11-10. LINKED OPERATION WITH PERIPHERAL AIR CONDITIONERS EQUIPMENT

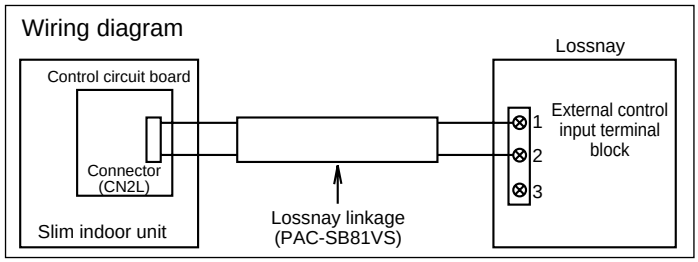
■ Lossnay operation

● Linked operation with a Lossnay unit can be obtained by connecting Lossnay linkage cable (Model PAC-SB81VS - sold separately) to the CN2L (Remote kit) on the circuit board of the indoor unit. This function must be selected from the remote controller.

① Summary of wiring

● Connect the Lossnay linkage cable (Model PAC-SB81VS) connector to CN2L on the indoor unit on the circuit board of the indoor unit.

● Connect the lead wire of the Lossnay linkage cable to the Lossnay external control input terminal blocks (1) and (2).
(At this time, the input terminal blocks (1) and (2) have no polarity.)



② Precautions when wiring

● The Lossnay linkage cable can be extended up to a maximum of 500 meters.
When extending the Lossnay linkage cable, be sure to connect securely and take proper steps to ensure insulation.
(Extension cable specifications: Sheathed vinyl cord or cable 0.5 to 0.75mm^2)

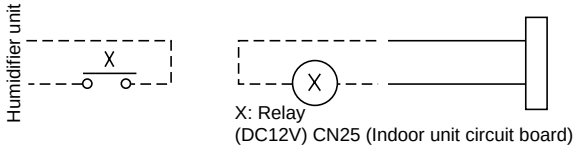
● Lossnay linked cable

● Arrange wiring so that there can be no contact between the Lossnay linkage cable and the power supply cord. Contact may cause malfunctioning. (Separate by 5cm or more.)

11-11. OBTAINING HUMIDIFIER SIGNAL

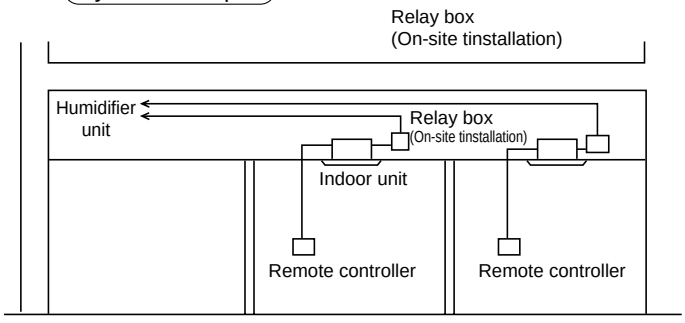
● The humidifier signal that is linked to the AC heating operation (indoor unit ventilator) can be obtained by connecting the adapter for the humidifier signal to connector CN25 on the printed circuit for the indoor unit and wiring it to the humidifier unit via the on-site relay box. There is no output when the thermostat is off, during heating preparation and during defrosting.

Basic wiring



※ Please consult your nearest Mitsubishi Electric representative for information about obtaining the adapter for humidifier signal.

System example



11-12. EXTERNAL MOUNTING OF TEMPERATURE SENSOR

● Temperature control from an alternative external location can be performed by connecting the temperature sensor (Model PAC-SE41TS-E - sold separately) to the CN20 connector on the circuit board for the indoor unit.

● The wired remote controller also has an internal temperature sensor. Function selection from the remote controller is required.
Refer to “FUNCTION SETTING” for information of installation manual about selecting functions with the remote controller.

11-13. MULTIPLE REMOTE CONTROL DISPLAY

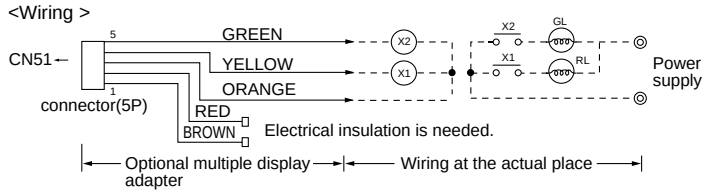
You can control several units with a multiple remote control display, by wiring an optional multiple display adapter (PAC-SA88HA-E) with relays and lamps on the market.

How to wire

(1) Connect the multiple display adapter to the connector CN51 on the indoor controller board.

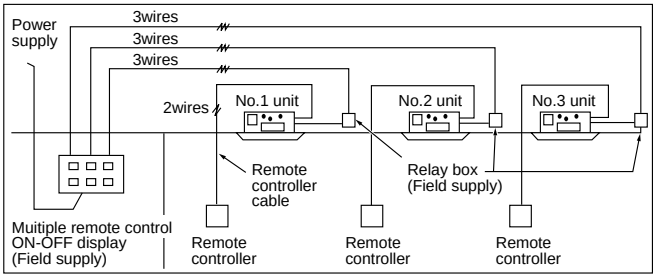
(2) Wire three of the five wires from the multiple display adapter as shown in the figure below.

<Wiring >



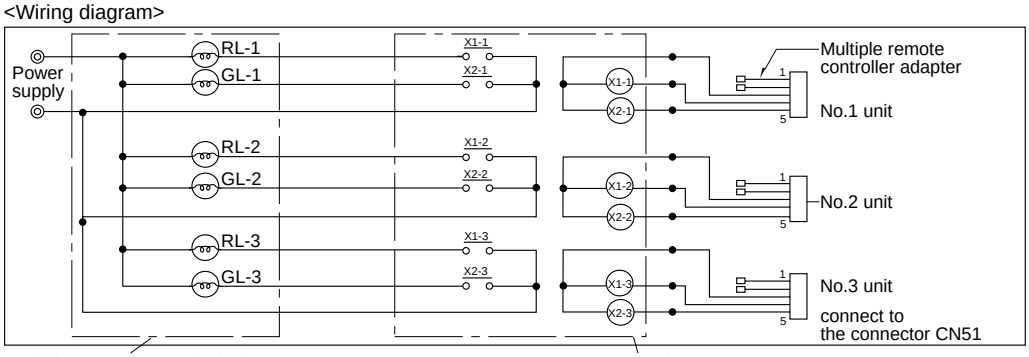
The maximum distance between indoor board and relay is 10m.

<System>



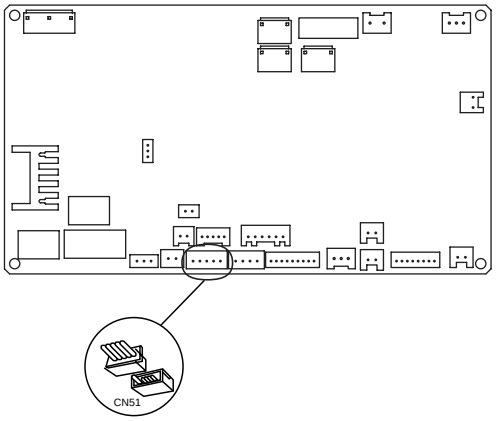
(Operation check)

<Wiring diagram>



Indoor controller board

Indoor controller board



[Notes on Signs]
X1:Relay (for operation lamp)
X2:Relay (for check lamp)
RL:Operation Lamp
GL:Check Lamp
[Field supplied parts]
Relays:12V DC with rated coil power consumption below 0.9W.
Lamps:Matching to power supply voltage.

11-14. INTERLOCKING OPERATION METHOD WITH DUCT FAN (Booster fan)

●Whenever the indoor unit is operating, the duct fan operates.

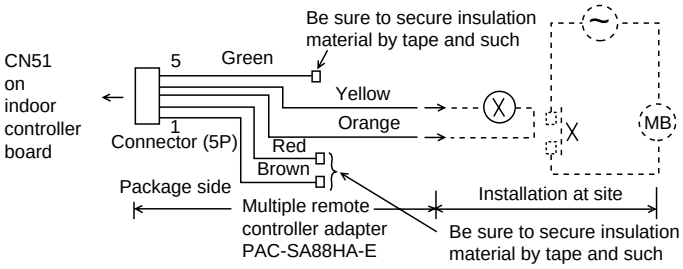
(1)Connect the optional multiple remote controller adapter(PAC-SA88HA-E)to the connector CN51 on the indoor controller board.

(2)Drive the relay after connecting the 12V DC relay between the Yellow and Orange connector lines.

Use a relay under 1W.

MB: Electromagnetic switch power relay for duct fan.

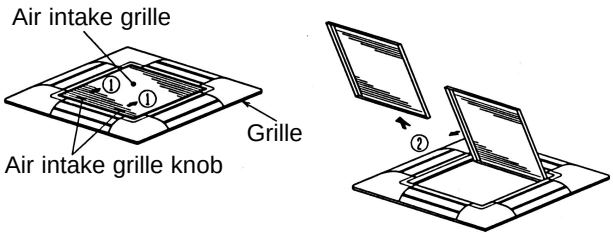
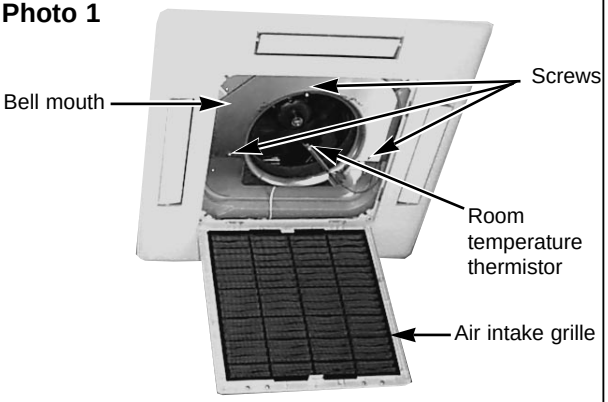
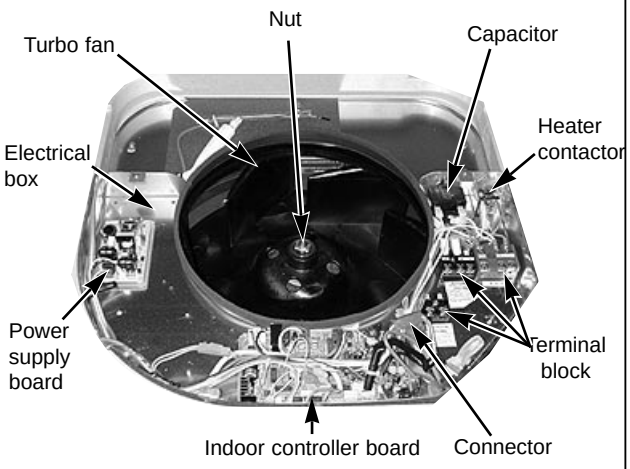
X: Auxiliary relay (12V DC LY-1F)

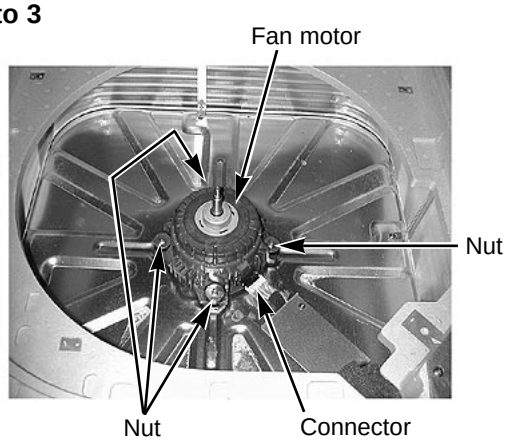
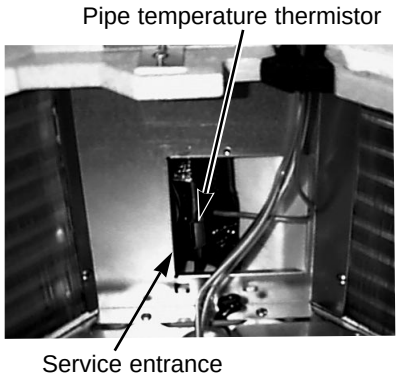
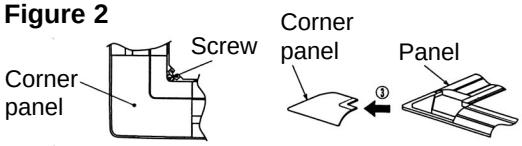
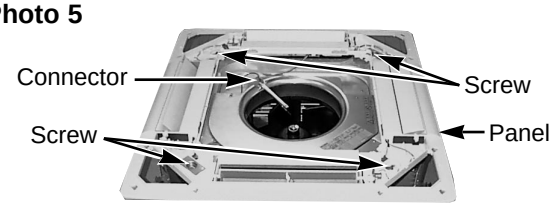
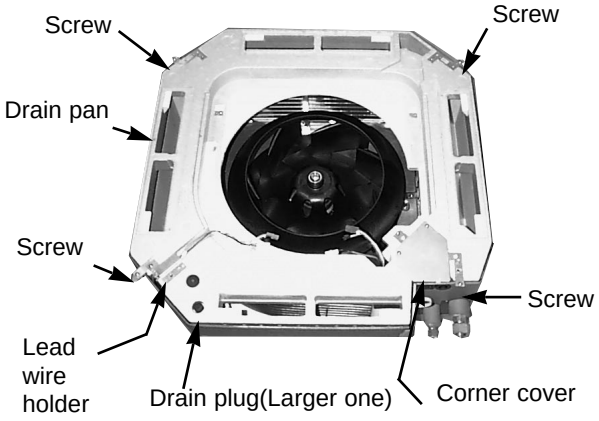


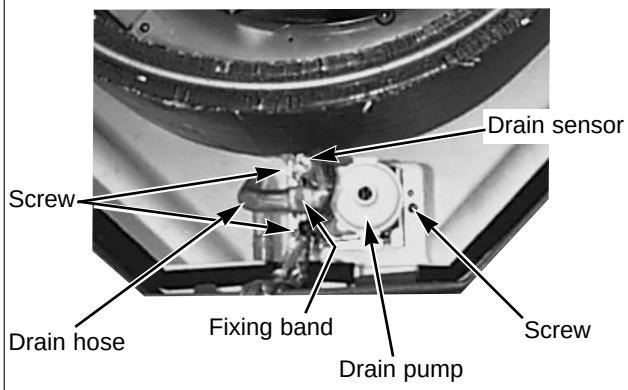
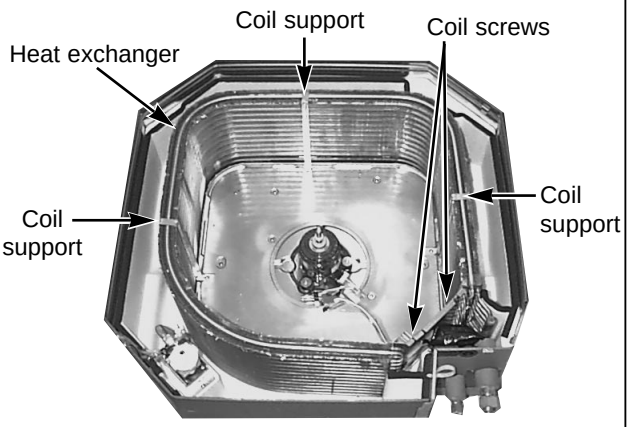
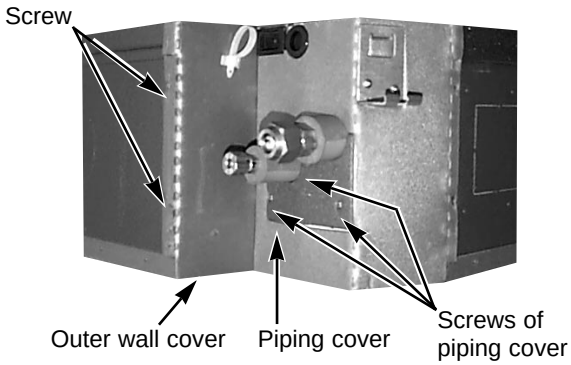
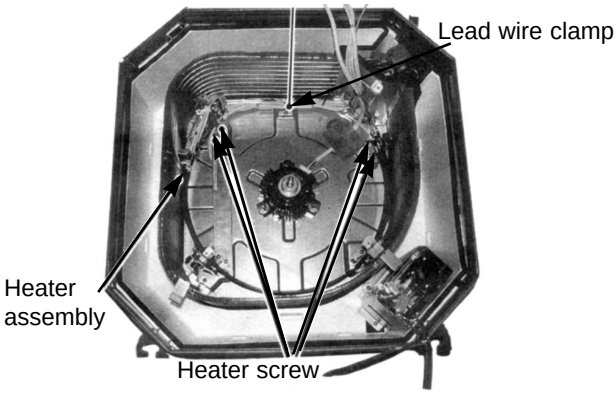
12 DISASSEMBLY PROCEDURE

PLH-3AAKH

Be careful on removing heavy parts.

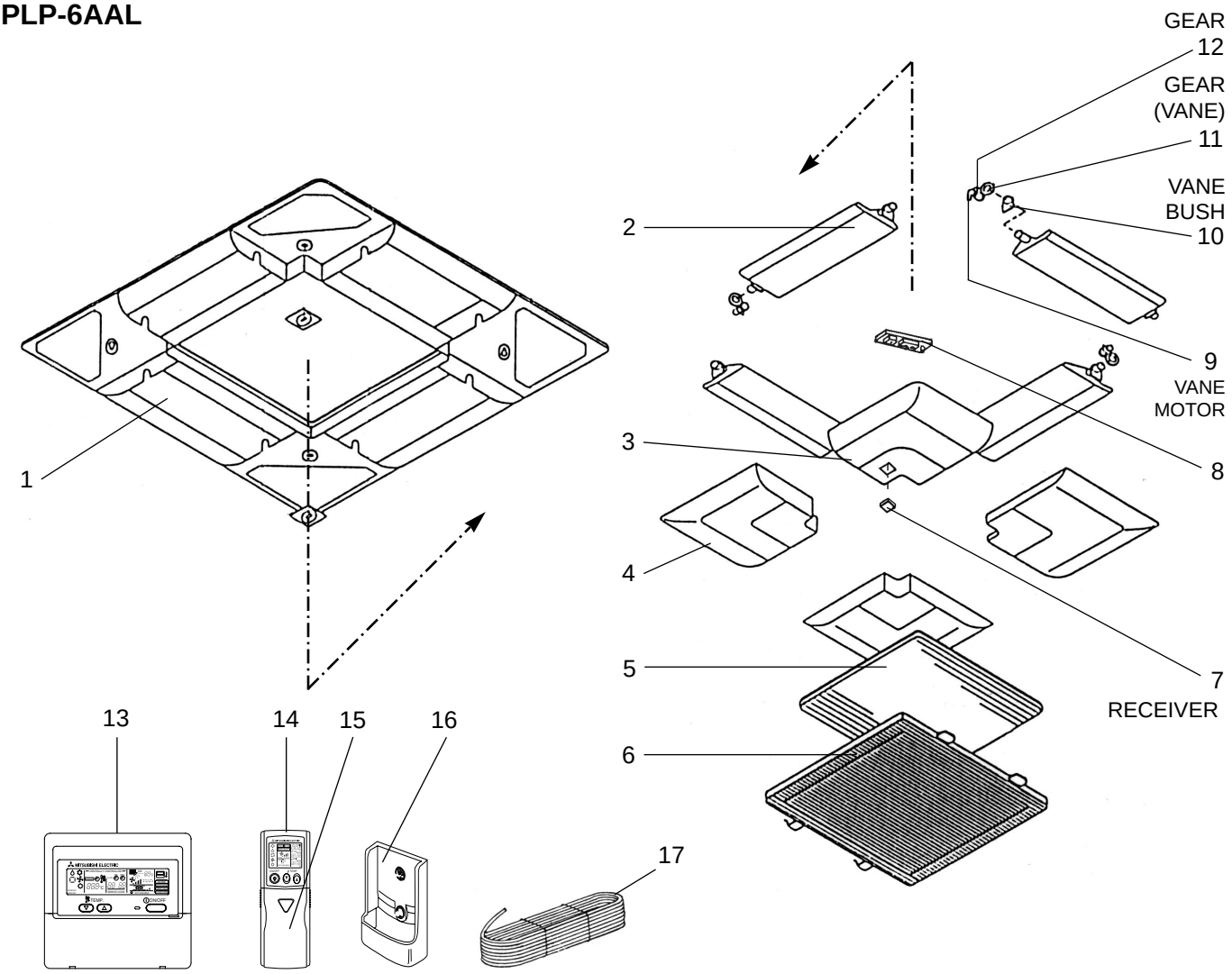
OPERATING PROCEDURE	PHOTOS&ILLUSTRATIONS
1. Removing the air intake grille (1) Slide the knob of air intake grille to the direction of the arrow ① to open the air intake grille. (2) Remove the string hook from the panel to pretend the grille from dropping. (3) Slide the shaft in the hinge to the direction of the arrow② and remove the air intake grille.	**Figure 1** 
2. Removing the room temperature thermistor (1) Remove the screw(×1) in the room temperature thermistor holder to remove the holder and the room temperature thermistor. (2) Remove the 1 screw from the bell mouth, and unscrew the another 2 screws (fixed to the oval hole which has different diameter) to remove the bell mouth. (3) Hold the holder claw, and remove the room temperature thermistor and holder. (4) Disconnect the connector (red) in the indoor control board.	**Photo 1** 
3. Removing the electrical box (1) Disconnect the lead wire of the vane motor from the clamp, and disconnect the white connector (10P). (2) Remove the room temperature thermistor with the holder. (3) Remove the bell mouth.(See photo 1) (4) Disconnect the relay connector in the electrical box. Red (3P) for fan motor power supply Green (6P) for auxiliary heater (5) Disconnect the connector on the indoor controller board in the electrical box. White (2P) for pipe temperature detecting thermistor Blue (2P) for drain pump White (3P) for drain sensor (6) Remove the 3 screws from the electrical box, loosen another 2 screws to remove the box. <Electrical parts in the electrical box> Indoor controller board Power supply board Terminal block Capacitor Heater contactor	**Photo 2** 

OPERATING PROCEDURE	PHOTOS&ILLUSTRATIONS
4. Remove the fan motor (1) Remove the bell mouth.(See photo 1) (2) Remove the electrical box.(See photo 2) (3) Remove the turbo fan nut. (4) Pull out the turbo fan. (5) Disconnect the connector of the fan motor lead wire. (6) Remove the 4 nuts of the fan motor.	**Photo 3** 
5. Removing the pipe temperature thermistor (1) Remove the bell mouth.(See photo 2) (2) Remove the electrical box.(See photo 3) (3) Remove the turbo fan. (4) Remove the screw of the service panel. (5) Remove the service panel. (6) Remove the pipe temperature thermistor which is inserted into the holder installed to the thin copper pipe. (7) Disconnect the 2-pin white connector.	**Photo 4** 
6. Removing the panel (1) Remove the air intake grille.(See figure 1) **Corner panel (See figure 2)** (1) Remove the screw of the corner. (2) Slide the corner panel to the direction of the arrow③, and remove the corner panel. **Panel (See photo 5)** (1) Disconnect the connector that connects with the unit. (2) Remove the 2 screws from the panel and loose another 2 screws, which fixed to the oval hole, have different diameter. (3) Rotate the panel a little to remove the screws.(Slide the panel so that the screw comes to a large diameter of the oval hole, which has two different diameters.)	**Figure 2**  **Photo 5** 
7. Removing the drain pan (1) Remove the panel. (See photo 5) (2) Remove the drain plug (Larger one), drain the remaining water in the drain pan. (3) Remove the corner cover. (2 screws) (4) Remove the bell mouth (See photo 1) (5) Remove the electrical box. (See photo 2) (6) Remove the lead wire holder. (1 screw) (7) Remove the 4 screws and pull out the drain pan. ※ Pull out the left and right of the pan gradually. Be careful not to crack or damage the pan.	**Photo 6** 

OPERATING PROCEDURE	PHOTOS&ILLUSTRATIONS
8. Removing the drain pump and drain sensor (1) Remove the panel. (See photo 5) (2) Remove the bell mouth. (See photo 1) (3) Remove the electrical box. (See photo 2) (4) Remove the drain pan. (See photo 6) (5) Remove the 3 screws of the drain pump. (6) Cut the drain hose band, pull out the drain hose from the drain pump. (7) Pull out the drain pump. (8) Remove the drain sensor and the holder.	**Photo 8** 
9. Removing the heat exchanger (1) Remove the panel. (See photo 5) (2) Remove the bell mouth. (See photo 1) (3) Remove the electrical box. (See photo 2) (4) Remove the drain pan. (See photo 6) (5) Remove the turbo fan. (See photo 3) (6) Remove the 3 screws of the piping cover, and pull out piping cover. (7) Remove the 4 screws of the outer wall cover, and pull out the outer wall cover. (8) Remove the screw of the coil support. (9) Remove the 2 screws of the coil. (10) Pull out the heat exchanger.	**Photo 9**  **Photo 10** 
10. Removing the heater (1) Remove the panel. (See photo 5) (2) Remove the electrical box. (See photo 2) (3) Remove the bell mouth.(See photo 1) (4) Remove the drain pan.(See photo 6) (5) Remove the turbo fan.(See photo 3) (6) Remove the 5 screws of the heater assembly. (7) Remove the clamp(1 screw) securing the lead wire. (8) Pull the heater assembly out.	

13 PARTS LIST

PANEL PARTS
PLP-6AA
PLP-6AAL

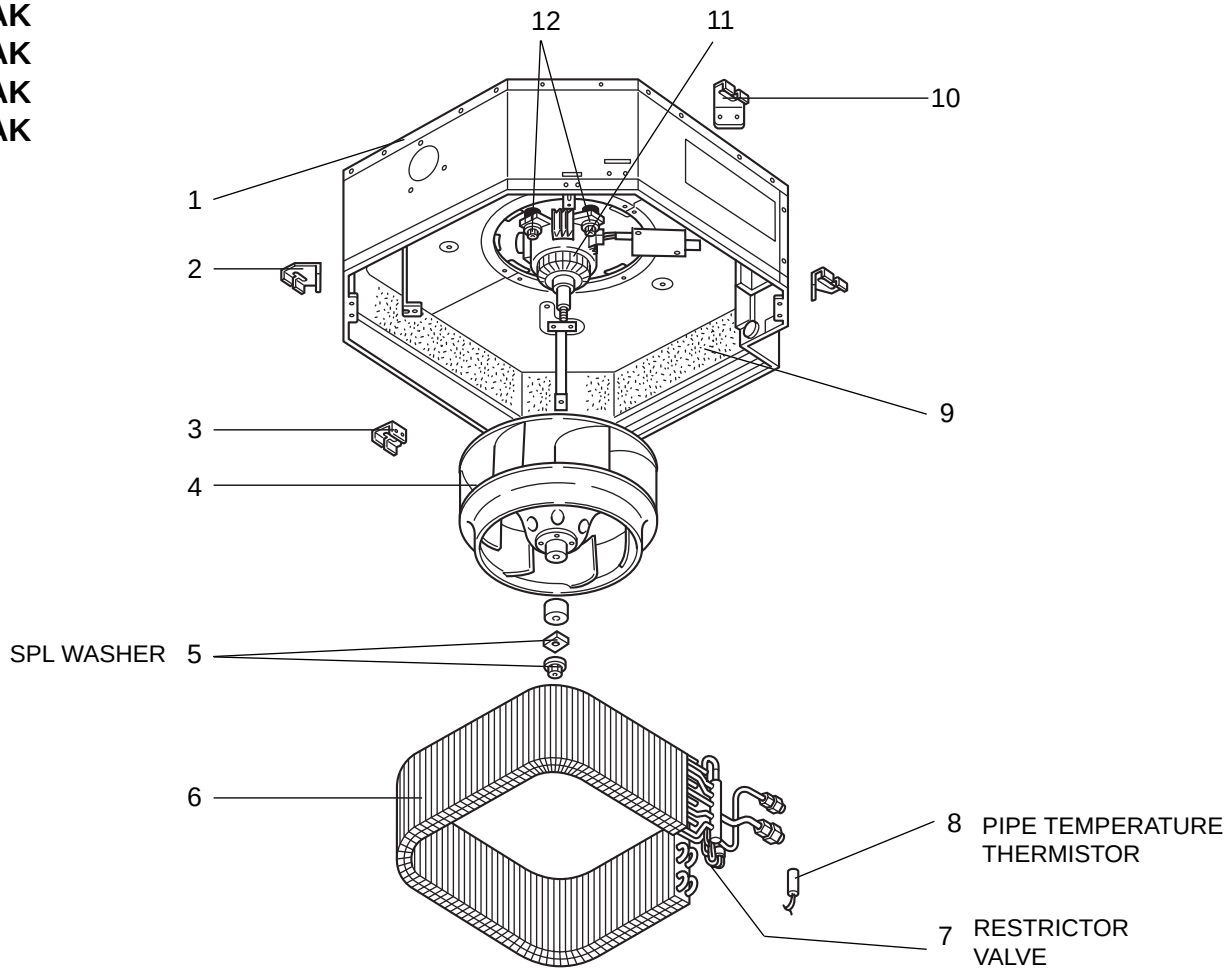


Part numbers that is circled is not shown in the figure.

No.	Parts No.	Parts Name	Specification	Q'ty / set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty	Price	
				PLP-6AA	PLP-6AAL				Unit	Amount
				WIRED	WIRELESS					
1	T7W E10 003	AIR OUTLET GRILLE		1	1	Including H2				
2	R01 E00 002	VANE		4	4					
3	R01 E02 638	CORNER PANEL (RECEIVER)			1					
4	R01 E03 638	CORNER PANEL		4	3					
5	R01 E00 500	L.L FILTER		1	1					
6	R01 E00 691	GRILLE ASSY		1	1					
7	R01 24K 658	RECEIVING UNIT			1		RU			
8	R01 E00 317	WIRELESS REMOTE CONTROLLER BOARD			1		W.B			
9	R01 E00 223	VANE MOTOR		4	4		MV			
10	R01 E00 063	VANE BUSH		8	8					
11	R01 E00 040	GEAR (VANE)		4	4					
12	R01 E01 040	GEAR		4	4					
13	T7W E08 713	REMOTE CONTROLLER		1			R.B			
14	T7W E06 714	WIRELESS REMOTE CONTROLLER			1					
15	R01 E01 049	REMOTE CONTROLLER DOOR			1					
16	R01 E00 075	REMOCON HOLDER			1					
17	T7W E01 305	CABLE ASSY		1						
⑱	R01 E00 673	SCREW ASSY		1	1					

FUNCTIONAL AND STRUCTURE PARTS

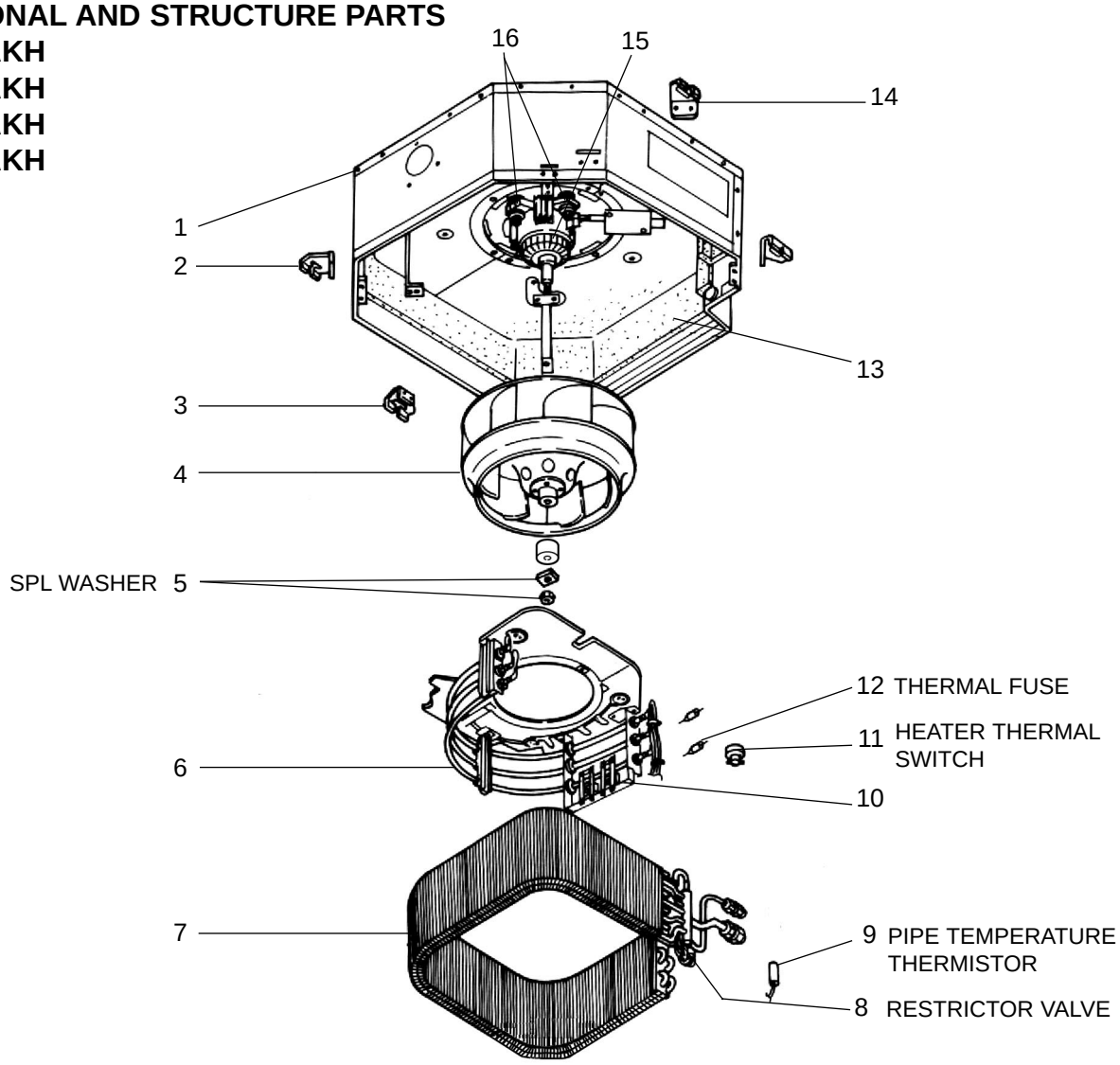
PLH-3AAK
PLH-4AAK
PLH-5AAK
PLH-6AAK



No.	Parts No.	Parts Name	Specification	Q'ty / set PLH-AAK				Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty	Price	
				3	4	5	6				Unit	Amount
1	—	BASE		1				(RG00G462G34)				
	—	BASE			1	1	1	(RG00G462G32)				
2	—	LEG		2	2	2	2	(RG02G374H05)				
3	—	LEG		1	1	1	1	(RG02G374H06)				
4	R01 E28 114	TURBO FAN		1								
	R01 E29 114	TURBO FAN			1	1	1					
5	R01 08K 097	SPL WASHER		1	1	1	1					
6	R01 E06 480	HEAT EXCHANGER		1								
	R01 E07 480	HEAT EXCHANGER			1							
	R01 E08 480	HEAT EXCHANGER				1						
	R01 E09 480	HEAT EXCHANGER					1					
7	R01 E06 418	RISTRICTOR VALVE		1	1	1	1					
8	T7W E06 202	PIPE TEMPERATURE THERMISTOR		1	1	1	1		TH2			
9	—	INNER COVER		1				(RG00G165G45)				
	—	INNER COVER			1	1	1	(RG00G165G47)				
10	—	LEG		1	1	1	1	(RG02G375H01)				
11	T7W E06 762	FAN MOTOR	D17B6P70MS	1					MF			
	T7W E07 762	FAN MOTOR	D176P120MS		1	1	1		MF			
12	R01 A41 105	RUBBER MOUNT		4	4	4	4					

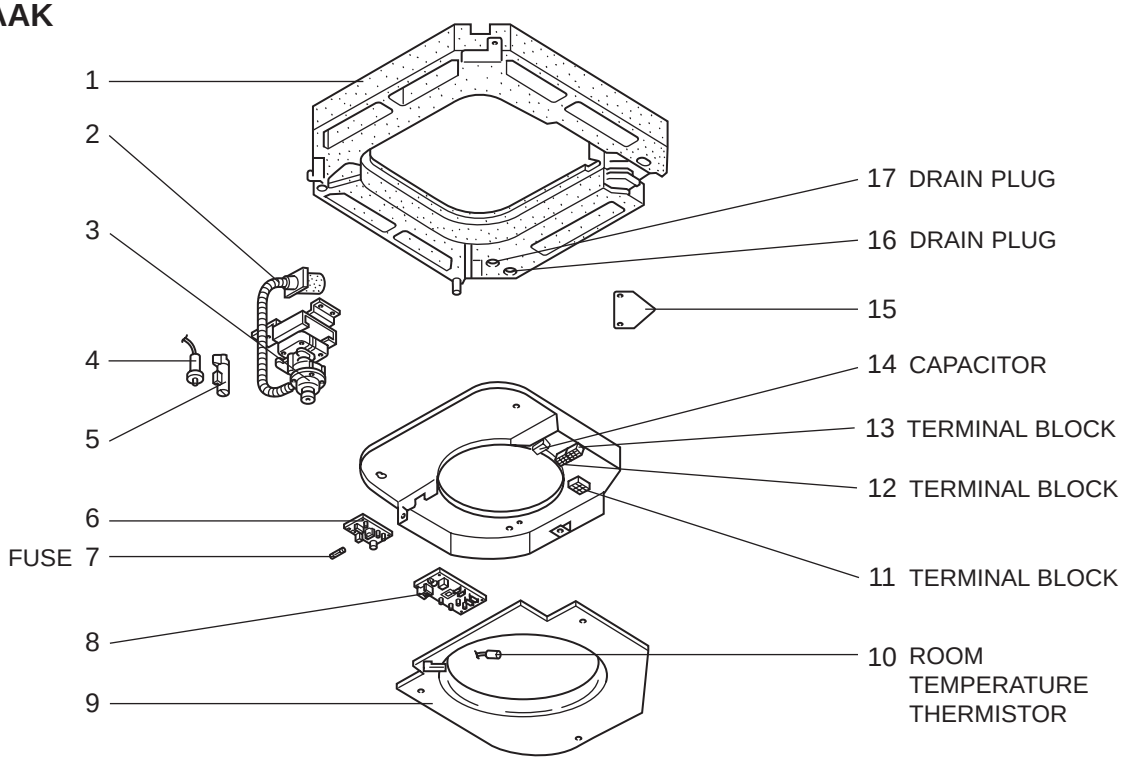
FUNCTIONAL AND STRUCTURE PARTS

PLH-3AAKH
PLH-4AAKH
PLH-5AAKH
PLH-6AAKH



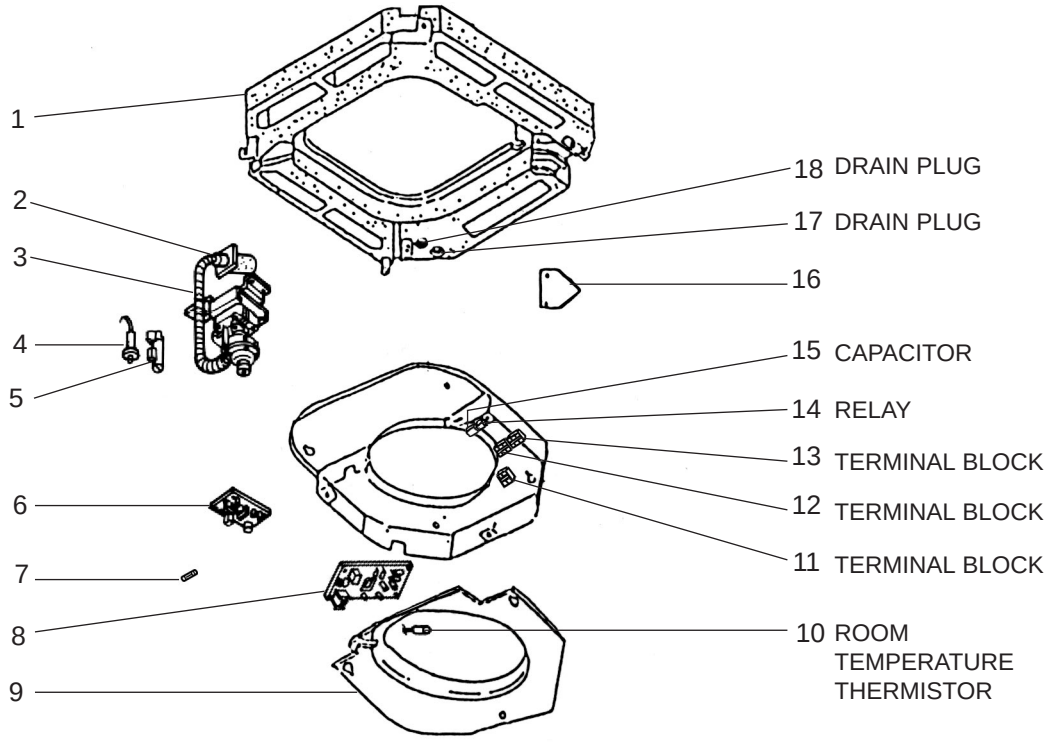
No.	Parts No.	Parts Name	Specification	Q'ty / set PLH -AAKH 3	4	5	6	Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty	Price Unit	Amount
1	—	BASE		1				(RG00G462G34)				
	—	BASE			1	1	1	(RG00G462G32)				
2	—	LEG		2	2	2	2	(RG02G374H05)				
3	—	LEG		1	1	1	1	(RG02G374H06)				
4	R01 E28 114	TURBO FAN		1								
	R01 E29 114	TURBO FAN			1	1	1					
5	R01 08K 097	SPL WASHER		1	1	1	1					
6	T7W E07 300	HEATER ELEMENT	240V/700W	3					H1			
	T7W E06 300	HEATER ELEMENT	240V/867W		3				H1			
	T7W E05 300	HEATER ELEMENT	240V/1000W			3	3		H1			
7	R01 E06 480	HEAT EXCHANGER		1								
	R01 E07 480	HEAT EXCHANGER			1							
	R01 E08 480	HEAT EXCHANGER				1						
	R01 E09 480	HEAT EXCHANGER					1					
8	R01 E00 418	RESTRICTOR VALVE		1	1	1	1					
9	T7W E06 202	PIPE TEMPERATURE THERMISTOR		1	1	1	1		TH2			
10	R01 20J 303	INSULATOR		1	1	1	1					
11	R01 46K 700	HEATER THERMAL SWITCH	50°C OFF	1	1	1	1		26H			
12	T7W E02 706	THERMAL FUSE	104°C, 16A	1	1	1	1		FS2			
13	—	INNER COVER		1				(RG00G165G62)				
	—	INNER COVER			1	1	1	(RG00G165G63)				
14	—	LEG		1	1	1	1	(RG02G375H01)				
15	T7W E06 762	FAN MOTOR	D17B6P70MS	1					MF			
	T7W E07 762	FAN MOTOR	D176P120MS		1	1	1		MF			
16	R01 A41 105	RUBBER MOUNT		4	4	4	4					

FUNCTIONAL AND STRUCTURE PARTS
PLH-3AAK
PLH-4AAK
PLH-5AAK
PLH-6AAK



No.	Parts No.	Parts Name	Specification	Q'ty / set PLH-AAK 3	4,5	6	Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty	Price Unit	Amount
1	R01 E02 529	DRAIN PAN		1							
	R01 E00 529	DRAIN PAN			1						
	R01 E01 529	DRAIN PAN				1					
2	R01 A41 523	DRAIN SOCKET		1	1	1					
3	T7W E08 355	DRAIN PUMP		1	1	1		DP			
4	R01 E00 266	DRAIN SENSOR		1	1	1		DS			
5	R01 31K 241	SENSOR HOLDER		1	1	1					
6	T7W E24 313	INDOOR POWER BOARD		1	1	1		P.B			
7	R01 E02 239	FUSE	6.3A 250V	1	1	1		FUSE			
8	T7W E47 310	INDOOR CONTROLLER BOARD		1	1	1		I.B			
9	—	CONTROL COVER ASSY		1	1	1	(RG00A239GP4)				
10	R01 E00 202	ROOM TEMPERATURE THERMISTOR		1	1	1		TH1			
11	T7W 512 716	TERMINAL BLOCK	2P (1, 2)	1	1	1		TB5			
12	T7W E27 716	TERMINAL BLOCK	3P (1, 2, 3)	1	1	1		TB4			
13	T7W A14 716	TERMINAL BLOCK	3P (L, N, ⏚)	1	1	1		TB2			
14	R01 17T 255	CAPACITOR	3.5μF 440V	1				C			
	T7W E02 255	CAPACITOR	7.0μF 440V		1	1		C			
15	—	CORNER COVER		1	1	1	(RG00G623G05)				
16	R01 A48 524	DRAIN PLUG		1	1	1					
17	R01 A41 524	DRAIN PLUG		1	1	1					

FUNCTIONAL AND STRUCTURE PARTS
PLH-3AAKH
PLH-4AAKH
PLH-5AAKH
PLH-6AAKH



No.	Parts No.	Parts Name	Specification	Q'ty / set PLH -AAKH				Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty	Price	
				3	4	5	6				Unit	Amount
1	R01 E02 529	DRAIN PAN		1								
	R01 E00 529	DRAIN PAN			1	1						
	R01 E01 529	DRAIN PAN					1					
2	R01 A41 523	DRAIN SOCKET		1	1	1	1					
3	T7W E08 355	DRAIN PUMP		1	1	1	1		DP			
4	R01 E00 266	DRAIN SENSOR		1	1	1	1		DS			
5	R01 31K 241	DRAIN SENSOR HOLDER		1	1	1	1					
6	T7W E24 313	POWER BOARD		1	1	1	1		P.B			
7	R01 E02 239	FUSE		1	1	1	1					
8	T7W E47 310	INDOOR CONTROLLER BOARD		1	1	1	1		I.B			
9	—	CONTROL COVER ASSY		1	1	1	1	(RG00A239GP4)				
10	R01 E00 202	ROOM TEMPERATURE THERMISTOR		1	1	1	1		TH1			
11	T7W 512 716	TERMINAL BLOCK	2P (1, 2)	1	1	1	1		TB5			
12	T7W E27 716	TERMINAL BLOCK	3P (1, 2, 3)	1	1	1	1		TB4			
13	T7W A14 716	TERMINAL BLOCK	3P (L, N, ⏚)	1	1	1	1		TB2			
14	R01 71G 215	RELAY	JC-1A DC12V	1	1	1	1		88H			
15	R01 17T 255	CAPACITOR	3.5μF 440V	1					C			
	T7W E02 255	CAPACITOR	7.0μF 440V		1	1	1		C			
16	—	CORNER COVER		1	1	1	1	(RG00G623G05)				
17	R01 A48 524	DRAIN PLUG		1	1	1	1					
18	R01 A41 524	DRAIN PLUG		1	1	1	1					

14 OPTIONAL PARTS

1. REFRIGERANT PIPES

Service Ref. : PLH-3AAK(H)

Part No.	PAC-05FFS-E	PAC-07FFS-E	PAC-10FFS-E	PAC-15FFS-E
Pipe length	5m	7m	10m	15m
Pipe size O.D .	Liquid:ϕ9.52 Gas:ϕ15.88			
Connection method	Indoor unit: Flared Outdoor unit: Flared			

Service Ref. : PLH-4AAK(H), PLH-5AAK(H), PLH-6AAK(H)

Part No.	PAC-PC51PI-E	PAC-SC52PI-E	PAC-SC53PI-E	PAC-SC54PI-E
Pipe length	5m	7m	10m	15m
Pipe size O.D.	Liquid:ϕ9.52 Gas:ϕ19.05			
Connection method	Indoor unit: Flared Outdoor unit: Flared			

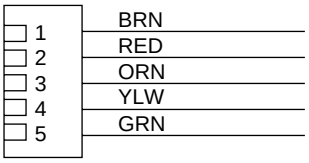
Note 1. How to connect refrigerant pipes.
Factory supplied optional refrigerant pipings contain refrigerant at the above atmospheric pressures. As long as the connection takes no more than 5 minutes, no air will enter, and there will be no need for air purging.
Remove the blind caps and make the connections within 5 minutes. After the connections for the indoor and outdoor units are made, open the stop valve on the outdoor unit to allow refrigerant gas to flow.

Note 2. The following main parts are contained in the optional refrigerant piping kit.
Heat insulating cover, vinyl tapes, nipples, sleeve and flange (for wall hole).

2. MULTIPLE REMOTE CONTROLLER ADAPTER

This adapter is needed for remote indication (operation/check).

Part No.	PAC-SA88HA-E
Applicable Service Ref.	PLH-3/4/5/6AAK(H)



3. REMOTE ON/OFF ADAPTER

Part No.	PAC-SE55RA-E
Applicable Service Ref.	PLH-3/4/5/6AAK(H)

4. REMOTE SENSOR

Part No.	PAC-SE41TS-E
Applicable Service Ref.	PLH-3/4/5/6AAK(H)

5. REMOTE OPERATION ADAPTER

Part No.	PAC-SF40RM-E
Applicable Service Ref.	PLH-3/4/5/6AAK(H)

6. MULTI FUNCTION CASEMENT (For HIGH EFFICIENCY FILTER AND FRESH AIR INTAKE)

Part No.	PAC-SG03TM-E
Applicable Service Ref.	PLH-3/4/5/6AAK(H)

7. HIGH EFFICIENCY FILTER ELEMENT (PAC-SG03TM-E is needed)

Part No.	PAC-SG01KF
Applicable Service Ref.	PLH-3/4/5/6AAK(H)

8. AIR OUTLET SHUTTER PLATE (20set, 2pcs/set)

Part No.	PAC-SG06SP-E
Applicable Service Ref.	PLH-3/4/5/6AAK(H)

Mr.SLIM™

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